

279-GluLeuIleGluGluValAlaGly-286

288-LysIleSerGlyGluGluAspArgTyrSerHis-298

308-ValAspGlySerLysLysIleValAsp-316

322-IleGluAlaLysAsnLysAlaLeuLeuGluLysThrAspThrAsnPhe-337

347-TyrArgThrLysAspGlyPheGluThrTyrAspLysLeuGlyGluAlaAspArgLysAlaLeu-367

374-LeuAlaGluAspLeuAlaGln-380

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AMPHI Regions - AMPHI

1-ValLysProArgPheTyrTrpAlaAlaCysAlaValLeuLeuThrAlaCysSerProGluProAlaAlaGluLysThrValSerAlaAlaSerAlaSerAlaAlaThrLeuThrValProThrAlaArgGlyAspAlaValValProLysAsnProGluArgValAlaValTyrAspTrpAlaAlaLeuAspThrLeuThrGluLeuGlyValAsnValGlyAlaThrThrAlaProValArgValAspTyrLeuGlnProAlaPheAspLysAlaAlaThrValGlyThrLeuPheGluProAspTyrGluAlaLeuHisArgTyrAsnProGlnLeuValIleThrGlyGlyProGlyAlaGluAlaTyrGluGlnLeuAlaLysAsnAlaThrThrIleAspLeuThrValAspAsnGlyAsnIleArgThrSerGlyGluLysGlnMetGluThrLeuAlaArgIlePheGlyLysGluAlaArgAlaAlaGluLeuLysAlaGlnIleAspAlaLeuPheAlaGlnThrArgGluAlaAlaLysGlyLysGlyArgGlyLeuValLeuSerValThrGlyAsnLysValSerAlaPheGlyThrGlnSerArgLeuAlaSerTrpIleHisGlyAspIleGlyLeuProProValAspGluSerLeuArgAsnGluGlyHisGlyGlnProValSerPheGluTyrIleLysGluLysAsnProAspTrpIlePheIleIleAspArgThrAlaAlaIleGlyGlnGluGlyProAlaAlaValGluValLeuAspAsnAlaLeuValArgGlyThrAsnAlaTrpLysArgLysGlnIleIleValMetProAlaAlaAsnTyrIleValAlaGlyGlyAlaArgGlnLeuIleGlnAlaAlaGluGlnLeuLysAlaAlaPheLysLysAlaGluProValAlaAlaGlyLysLys-321

Antigenic Index - Jameson-Wolf

1-ValLysProArgPheTyrTrpAlaAlaCysAlaValLeuLeuThrAlaCysSerProGluProAlaAlaGluLysThrValSerAlaAlaSerAlaSerAlaAlaThrLeuThrValProThrAlaArgGlyAspAlaValValProLysAsnProGluArgValAlaValTyrAspTrpAlaAlaLeuAspThrLeuThrGluLeuGlyValAsnValGlyAlaThrThrAlaProValArgValAspTyrLeuGlnProAlaPheAspLysAlaAlaThrValGlyThrLeuPheGluProAspTyrGluAlaLeuHisArgTyrAsnProGlnLeuValIleThrGlyGlyProGlyAlaGluAlaTyrGluGlnLeuAlaLysAsnAlaThrThrIleAspLeuThrValAspAsnGlyAsnIleArgThrSerGlyGluLysGlnMetGluThrLeuAlaArgIlePheGlyLysGluAlaArgAlaAlaGluLeuLysAlaGlnIleAspAlaLeuPheAlaGlnThrArgGluAlaAlaLysGlyLysGlyArgGlyLeuValLeuSerValThrGlyAsnLysValSerAlaPheGlyThrGlnSerArgLeuAlaSerTrpIleHisGlyAspIleGlyLeuProProValAspGluSerLeuArgAsnGluGlyHisGlyGlnProValSerPheGluTyrIleLysGluLysAsnProAspTrpIlePheIleIleAspArgThrAlaAlaIleGlyGlnGluGlyProAlaAlaValGluValLeuAspAsnAlaLeuValArgGlyThrAsnAlaTrpLysArgLysGlnIleIleValMetProAlaAlaAsnTyrIleValAlaGlyGlyAlaArgGlnLeuIleGlnAlaAlaGluGlnLeuLysAlaAlaPheLysLysAlaGluProValAlaAlaGlyLysLys-321

Hydrophilic Regions - Hopp-Woods

1-ValLysProArgPheTyrTrpAlaAlaCysAlaValLeuLeuThrAlaCysSerProGluProAlaAlaGluLysThrValSerAlaAlaSerAlaSerAlaAlaThrLeuThrValProThrAlaArgGlyAspAlaValValProLysAsnProGluArgValAlaValTyrAspTrpAlaAlaLeuAspThrLeuThrGluLeuGlyValAsnValGlyAlaThrThrAlaProValArgValAspTyrLeuGlnProAlaPheAspLysAlaAlaThrValGlyThrLeuPheGluProAspTyrGluAlaLeuHisArgTyrAsnProGlnLeuValIleThrGlyGlyProGlyAlaGluAlaTyrGluGlnLeuAlaLysAsnAlaThrThrIleAspLeuThrValAspAsnGlyAsnIleArgThrSerGlyGluLysGlnMetGluThrLeuAlaArgIlePheGlyLysGluAlaArgAlaAlaGluLeuLysAlaGlnIleAspAlaLeuPheAlaGlnThrArgGluAlaAlaLysGlyLysGlyArgGlyLeuValLeuSerValThrGlyAsnLysValSerAlaPheGlyThrGlnSerArgLeuAlaSerTrpIleHisGlyAspIleGlyLeuProProValAspGluSerLeuArgAsnGluGlyHisGlyGlnProValSerPheGluTyrIleLysGluLysAsnProAspTrpIlePheIleIleAspArgThrAlaAlaIleGlyGlnGluGlyProAlaAlaValGluValLeuAspAsnAlaLeuValArgGlyThrAsnAlaTrpLysArgLysGlnIleIleValMetProAlaAlaAsnTyrIleValAlaGlyGlyAlaArgGlnLeuIleGlnAlaAlaGluGlnLeuLysAlaAlaPheLysLysAlaGluProValAlaAlaGlyLysLys-321

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AMPHI Regions - AMPHI

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11-AlaAspArgAlaValArgSerAlaThr-19
 59-IleGlnAspThrAsn-63
 82-LeuSerAsnAlaAla-86
 139-LeuAsnAsnLysValPheGlnGlyTyr-147
 156-LeuAsnGlnAspIleTyrArgGluValGlnLysMetGly-168
 215-AsnValGlnAsnAspTyrAlaAspValLeu-224
 281-SerTyrPheAlaGluValProLysAlaGlyThrLysGluPheAspAspTyrValLysIleTrpGlyGlu-303

Antigenic Index - Jameson-Wolf

9-ThrGlnAlaAspArgAlaValArg-16
 18-AlaThrAlaProLys-22
 29-LysIleIleAspGluLysThrGlyLysValSerPheAspThrArgGlnIle-45
 50-AspLeuSerLysGluGluLeuAlaSerIleGlnAspThrAsnGlyLysVal-66
 72-ProGlyIlePheAsnAsnArgGluAspSerLeuSerAsnAlaAlaLysGlnAsnArgAsnSerThrAsnGlySer-96
 104-ProProThrGlyLysTyrLysSerAspSerAsnAsnLysIleLys-118
 137-AspGlnLeuAsnAsnLys-142
 147-TyrLeuProLysThrAsnSerGluLysLeuAsnGlnAspIleTyrArgGluValGlnLysMetGlyAsnGlyTrpSerValAspThrSerAsnHisSerArgGlyGlyIle-183
 190-LysAspTrpValAsnAsnGlnLysGlnAsnGly-200
 203-ProIleArgLysAlaArgPhe-209
 214-ThrAsnValGlnAsnAspTyrAlaAspValLeuGlnLysAsnGlyTyr-229
 233-GlyAlaAspGlyLysThrTyrAsnSerGlySer-243
 247-ValHisAspLysAspPheValGlyAsnLys-256
 263-GlyThrAsnAspThrThrGlnGlyThrCysLysGlyLeuCys-276
 286-ValProLysAlaGlyThrLysGluPheAspAspTyrVal-298
 304-ValGluTyrAspAlaGlnGlyLysProIleAsnLysSerLysProIleLeuValGluProAsnLysThrLysAspAsnGluLysTyrGluLysGluAlaPhe-337

Hydrophilic Regions - Hopp-Woods

10-GlnAlaAspArgAlaValArg-16
 18-AlaThrAlaProLys-22
 29-LysIleIleAspGluLysThrGlyLysValSerPheAspThr-42
 50-AspLeuSerLysGluGluLeuAlaSer-58
 60-GlnAspThrAsnGly-64
 76-AsnAsnArgGluAspSerLeuSerAsnAlaAlaLysGlnAsnArgAsnSerThrAsn-94
 105-ProThrGlyLysTyrLysSerAspSerAsnAsnLysIleLys-118
 151-ThrAsnSerGluLysLeuAsnGlnAspIleTyrArgGluValGlnLysMet-167
 175-ThrSerAsnHisSerArgGlyGlyIle-183
 196-GlnLysGlnAsnGly-200
 203-ProIleArgLysAlaArgPhe-209
 219-AspTyrAlaAspValLeuGln-225
 234-AlaAspGlyLysThrTyrAsn-240
 247-ValHisAspLysAspPheVal-253
 265-AsnAspThrThrGlnGlyThrCys-272
 286-ValProLysAlaGlyThrLysGluPheAspAspTyrVal-298
 304-ValGluTyrAspAlaGlnGlyLysProIleAsnLysSerLysProIleLeu-320
 322-GluProAsnLysThrLysAspAsnGluLysTyrGluLysGluAlaPhe-337

752-2**AMPHI Regions - AMPHI**

6-GluArgMetThrGlnIleAlaLysLeuLeuAsnSerSer-18
 29-PheLeuThrGluIleLysAspTyrSerGluPhe-39

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51-TrpAspLysPheArgArgIle-57
 69-ValLysGluSerArgLysLysIleGlnLysProIleAsp-81
 105-LysSerCysGlySerSerIleGly-112
 114-SerSerLeuGlyGlyPheGly-120
 145-GlyAlaAlaThrThrArgLysValAlaLysAspMetLeuLysSerGln-160
 194-IleLeuAspLeuHisArgIleAlaThrSer-203
 233-GlnProProProHisGly-238
 240-ValHisThrLeuMetGluGluVal-247
 254-ThrTyrAspGlyValGluAsnProPheIleHisProValValGlnAlaIle-270
 272-LeuHisPheLeuIleGlyTyrIleHisPro-281
 309-IleSerIleSerArgLeuLeuLysAsnAlaProAlaGlnTyr-322
 347-IleLysArgAlaValAlaAspLeuGluHis-356
 371-AlaIleAlaGlnTyrThrGluLysIleGlyLysLeu-382
 390-LeuGlnLysAlaValGluGluSerGly-398
 422-SerLysLeuGlyGluTyrArgPhe-429
 435-SerGlyAsnAlaLeuGluTyrValAlaPro-444

Antigenic Index - Jameson-Wolf

4-LeuThrGluArgMetThrGln-10
 15-LeuAsnSerSerAlaAsnAsnProAspIleAspIleProAspPheLeuThrGluIleLysAspTyrSerGlu-38
 40-SerValThrAspGluAsnGlyThr-47
 52-AspLysPheArgArgIleHisThrGluAspThrArgMetLysTrpArgAlaValLysGluSerArgLysLysIleGlnLysProIleAsp-81
 92-IleProAspSerLeuGln-97
 102-LeuIleAspLysSerCysGlySerSerIleGly-112
 117-GlyGlyPheGlyArgSerGluGlnAsnArgPheLeu-128
 147-AlaThrThrArgLysValAlaLysAspMetLeuLysSerGlnArgLysProLysThrLysAspGluIle-169
 179-LysLysAlaValGluLeuLysAsnThr-187
 204-AsnAlaIleGluAsnLysAlaGluProGlyGlnPheArgGlnAspAspGluIlePhe-222
 226-IleAsnGlyAsnSerLeuTyrGlnProProProHisGly-238
 253-AsnThrTyrAspGlyValGluAsnProPhe-262
 280-HisProPheGlyAspGlyAsnGlyArgThrAlaArg-291
 313-ArgLeuLeuLysAsnAlaPro-319
 330-GluThrAspAspLeuAsp-335
 342-TyrGlnCysAspIleIleLys-348
 358-IleSerAspLysGlnLysHisGlnGlnGluPheLysAla-370
 375-TyrThrGluLysIleGlyLysLeuAsnGlnArgGln-386
 392-LysAlaValGluGluSerGlyLys-399
 415-AsnThrAlaArgSerAspLeuSerLysLeuGlyGluTyrArgPhe-429
 433-PheLysSerGlyAsnAlaLeu-439
 445-GlnAspLeuLeuGluArgLeuGluLysLys-454

Hydrophilic Regions - Hopp-Woods

4-LeuThrGluArgMetThrGln-10
 19-AlaAsnAsnProAspIleAspIle-26
 31-ThrGluIleLysAspTyrSerGlu-38
 40-SerValThrAspGluAsnGly-46
 52-AspLysPheArgArgIleHisThrGluAspThrArgMetLysTrpArgAlaValLysGluSerArgLysLysIleGlnLysProIle-80
 102-LeuIleAspLysSerCysGly-108
 120-GlyArgSerGluGlnAsnArgPheLeu-128
 147-AlaThrThrArgLysValAlaLysAspMetLeuLysSerGlnArgLysProLysThrLysAspGluIle-169

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179-LysLysAlaValGluLeuLysAsn-186
204-AsnAlaIleGluAsnLysAlaGluProGlyGlnPheArgGlnAspAspGluIlePhe-222
283-GlyAspGlyAsnGlyArgThrAlaArg-291
330-GluThrAspAspLeuAsp-335
358-IleSerAspLysGlnLysHisGlnGlnGluPheLysAla-370
375-TyrThrGluLysIleGlyLysLeuAsnGlnArgGln-386
392-LysAlaValGluGluSerGlyLys-399
416-ThrAlaArgSerAspLeuSerLysLeuGlyGlu-426
446-AspLeuLeuGluArgLeuGluLysLys-454

753**AMPHI Regions - AMPHI**

44-IleValGluMetMetThrTyrIleLeu-52
75-TrpAlaTyrPheAspGluValAlaGln-83
109-GlnTrpPheAlaProLeu-114
121-ArgSerAlaValArgGlnLeu-127
129-ProSerThrThrValArgAla-135

Antigenic Index - Jameson-Wolf

13-LysLeuTyrProAsnGluGlnTrpAsnGluSerGluAla-25
34-TyrGlnSerProThrHisArgGln-41
55-LeuLysAsnGlyGln-59
64-CysLysGlyThrGlnProIleGly-71
85-HisTyrLeuGluSerAspArgHisLeuArgAspAsnSerAspTrpAsnCysGlyAspAsnIle-105
112-AlaProLeuGlyHisSerHisGlnMetArgSerAlaVal-124
136-LeuTyrHisLysGlySerAspLysGlyLeuArg-146

Hydrophilic Regions - Hopp-Woods

19-GlnTrpAsnGluSerGluAla-25
87-LeuGluSerAspArgHisLeuArgAspAsnSerAsp-98
139-LysGlySerAspLysGlyLeuArg-146

754**AMPHI Regions - AMPHI**

29-ArgIleGlyThrLeuGluLysGlyAlaMet-38
67-MetProHisIlePheAlaGlnTyrPheProGluGlyPheLeuAsp-81
108-ArgGluThrLeuGlyArg-113
121-ProLeuPheAsnGluTrpIleAspGlyLeuGlu-131
152-PheGlnGlnTyrMetAlaGluIle-159
161-HisHisGlyArgPheValSerValSer-169
181-ArgArgAsnThrLys-185
189-SerTyrIleAlaLysGly-194
249-MetGluAspPheThrSerLeuArgGln-257
269-AlaAlaIleAlaGlnIleIleArgGlnIleSerGlyArgProAsp-283
288-HisPhePheAsnGlnLeuAlaAla-295
324-ValTyrAspValLeuAspThr-330
336-GlyThrGlnGlyIlePheAspAlaTyrAsp-345
399-TyrSerAspValLeu-403

Antigenic Index - Jameson-Wolf

8-ValSerGlyAsnArgMetArgLysProArg-17
25-AlaAsnAspGluArgIleGlyThrLeuGluLysGlyAla-37
43-TyrAspAsnProAsnSerSerLeu-50
54-HisTyrGlnAspArgSerLysVal-61
75-PheProGluGlyPheLeu-80
93-AlaProPheGluAspAsnGluMetLeu-101
114-IleHisValArgCysAsnAspProLeuPhe-123

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130-LeuGluMetLysAsnProArgIleLeuThrGluArgAspLeuLeu-144
 163-GlyArgPheValSer-167
 170-GlyIleGlnGlnLysMetSerLeuAspAlaIleArgArgAsnThrLysGlnThrAla-188
 194-GlyPheAspAlaSerGluTyrProCys-202
 224-ThrSerLeuSerGluAspSerSer-231
 236-ArgArgPheAspValSerGluGlnGlyTyr-245
 250-GluAspPheThrSer-254
 256-ArgGlnTyrSerValGluAspLysTyrLysGlySerTyr-268
 278-IleSerGlyArgProAspGluAspLeu-286
 299-LeuLysAsnGlyAspAlaHisLeu-306
 315-AspGluTyrAspVal-319
 343-AlaTyrAspAspThrLeu-348
 352-LeuThrAsnHisGlyLysLysThrTyrProSerLysAsnThr-365
 369-PheAlaGluLysTyrCysAspLeuGlyArgGluAspAlaSerPhe-383
 389-ValGlnAlaLysGluGlnVal-395
 399-TyrSerAspValLeuArgGluAsnGluTrpLeu-409
 415-PheIleProAspGluAsnGluGluGlyLeu-424

Hydrophilic Regions - Hopp-Woods

10-GlyAsnArgMetArgLysProArg-17
 25-AlaAsnAspGluArgIleGlyThrLeuGluLysGlyAla-37
 55-TyrGlnAspArgSerLysVal-61
 93-AlaProPheGluAspAsnGluMetLeu-101
 114-IleHisValArgCysAsnAsp-120
 130-LeuGluMetLysAsnProArgIleLeuThrGluArgAspLeuLeu-144
 175-MetSerLeuAspAlaIleArgArgAsnThrLysGln-186
 194-GlyPheAspAlaSerGlu-199
 225-SerLeuSerGluAspSerSer-231
 236-ArgArgPheAspValSerGlu-242
 250-GluAspPheThrSer-254
 258-TyrSerValGluAspLysTyrLysGly-266
 278-IleSerGlyArgProAspGluAspLeu-286
 300-LysAsnGlyAspAlaHisLeu-306
 315-AspGluTyrAspVal-319
 354-AsnHisGlyLysLysThrTyrProSer-362
 369-PheAlaGluLysTyrCysAspLeuGlyArgGluAspAlaSerPhe-383
 389-ValGlnAlaLysGluGlnVal-395
 401-AspValLeuArgGluAsnGluTrpLeu-409
 417-ProAspGluAsnGluGluGlyLeu-424

755**AMPHI Regions - AMPHI**

22-AsnAsnTyrThrAsnAlaTyrSerAspIleLysThrIle-34
 38-HisGlyPheGluAsnIleGlnGly-45
 75-SerCysIleSerAsnIleLysPhe-82
 124-GluGlnIleAsnGlnValLeu-130

Antigenic Index - Jameson-Wolf

10-MetAspThrAsnCysLeuLysAspAsnTyrHisGlyAsnAsnTyrThrAsnAlaTyrSerAsp-30
 42-AsnIleGlnGlySer-46
 48-TyrLeuGlyArgGluGlyIleSerGluAlaHis-58
 83-TyrArgLeuGluSerAspLeu-89
 108-ArgValGluGlnLeuArg-113
 120-GlyLeuSerAspGluGlnIle-126
 129-ValLeuGluLysGlnLysPheGluLeuGluSerProAsnLeuLys-143

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Hydrophilic Regions - Hopp-Woods

10-MetAspThrAsnCysLeuLysAspAsnTyrHis-20
 49-LeuGlyArgGluGlyIleSerGluAlaHis-58
 83-TyrArgLeuGluSerAspLeu-89
 108-ArgValGluGlnLeuArg-113
 120-GlyLeuSerAspGluGlnIle-126
 129-ValLeuGluLysGlnLysPheGluLeuGluSerProAsnLeu-142
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AMPHI Regions - AMPHI

6-AlaGlnThrLeuValGluIleGlnAspSerLeuTyrArgValValSerThrVal-23
 29-AsnLeuLysArgLeuThr-34
 57-AspPheLysGluThrLeuValArgPheGlyArgAspMetLeuGlnAspMetPro-74
 98-TyrLeuGluTyrLeuLysGlnValAlaSer-107
 113-GluArgLeuTyrAsnAlaValAspArgLeuAlaGluSerGlnGluArg-128
 130-ThrSerAlaIleLeu-134
 136-GlyAlaArgGlyAlaAspPhe-142

Antigenic Index - Jameson-Wolf

11-GluIleGlnAspSerLeuTyr-17
 24-GlnTyrGlyAspAspAsnLeuLysArgLeuThrAlaAspLysArgLysGlnTyr-41
 45-PheLysIleSerGluGlySerThrArgValGluSerAspPheLysGluThrLeu-62
 65-PheGlyArgAspMetLeuGlnAspMetProProLysIleArgSer-79
 105-ValAlaSerGluGlyTyrGlnThrGluArgLeuTyrAsnAlaValAspArgLeuAlaGluSerGlnGluArg
 IleThr-130
 135-LysGlyAlaArgGlyAlaAsp-141
 144-GlnIleGlyArgArgSerTyrSerArgGluAspIleSerGluAlaAsnArgArgAlaGluArgValProTyr
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 171-LeuValSerAspGlyAsn-176
 182-SerAspIleGlyAsp-186

Hydrophilic Regions - Hopp-Woods

11-GluIleGlnAspSerLeu-16
 25-TyrGlyAspAspAsnLeuLysArgLeuThrAlaAspLysArgLysGlnTyr-41
 45-PheLysIleSerGluGlySerThrArgValGluSerAspPheLysGluThrLeu-62
 65-PheGlyArgAspMetLeuGln-71
 73-MetProProLysIleArgSer-79

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114-ArgLeuTyrAsnAlaValAspArgLeuAlaGluSerGlnGluArgIleThr-130

135-LysGlyAlaArgGlyAlaAsp-141

144-GlnIleGlyArgArgSerTyrSerArgGluAspIleSerGluAlaAsnArgArgAlaGluArgValProTyr-167

757**AMPHI Regions - AMPHI**

47-AspTyrGlnSerAlaAlaAsnLys-54

79-AsnLeuLeuHisAspPheSerAspGlyLeu-88

97-LysAlaAspLysIleThr-102

115-GlnLysAlaGluLysLeuSerLysAlaAla-124

140-ArgAspThrGlyAsp-144

154-AsnAlaGlnLysGluProThrArgGluTrpAla-164

Antigenic Index - Jameson-Wolf

16-AlaCysGlySerGlnSerGluGluGlnProAlaSerAlaGlnProGlnGluGlnAlaGlnSerGluLeuLysThrMetPro-42

46-ThrAspTyrGlnSerAlaAlaAsnLysGlyLeuAsnAspGlnLysThrGlyLeuThrLeu-65

73-AspAsnAlaGluGlyLysAsnLeuLeuHisAspPheSerAspGlyLeu-88

93-ValAspThrAspLysAlaAspLysIleThrAla-103

108-TrpAsnThrAspAlaMetProGlnLysAlaGluLysLeuSerLys-122

132-AlaProGluAspArgThrMetLeuArgAspThrGlyAspGlnIleGluMetAlaIleAspSerHisAsnAlaGlnLysGluProThrArgGluTrpAlaArgGlyGlyIle-168

Hydrophilic Regions - Hopp-Woods

19-SerGlnSerGluGluGlnProAla-26

29-GlnProGlnGluGlnAlaGlnSerGluLeuLysThr-40

50-SerAlaAlaAsnLysGlyLeuAsnAspGlnLysThr-61

73-AspAsnAlaGluGlyLysAsnLeu-80

93-ValAspThrAspLysAlaAspLysIleThrAla-103

112-AlaMetProGlnLysAlaGluLysLeuSerLys-122

132-AlaProGluAspArgThrMetLeuArgAspThrGlyAspGlnIleGluMetAlaIle-150

152-SerHisAsnAlaGlnLysGluProThrArgGluTrpAlaArg-165

758**AMPHI Regions - AMPHI**

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15-AlaThrLeuAlaAspGluLeuGlnTyrVal-24
 53-AlaGluValAlaAla-57
 60-GlnThrValIleSerGluIleValArgArgHisThr-71
 87-ProTyrLeuGlyGlyLeuProGluAlaLeuHisThr-98
 125-PheAlaSerProGlyGlyTrpGlnIleIleGly-135

Antigenic Index - Jameson-Wolf

9-ArgPheAspThrAspLeu-14
 32-AspHisGlnGlyLysLeuVal-38
 44-TyrGlyGlyGluTyrGlyProAspLeuAlaGlu-54
 66-IleValArgArgHisThrAla-72
 96-LeuHisThrProArgArgAlaValProArgThrSerValPro-109
 115-IleGlyGlySerGln-119
 145-AspLeuAsnProPro-149
 154-AlaGlyAspGlnValArgPheValAlaGluArgIleGluPro-167

Hydrophilic Regions - Hopp-Woods

10-PheAspThrAspLeu-14
 32-AspHisGlnGlyLysLeuVal-38
 48-TyrGlyProAspLeuAlaGlu-54
 66-IleValArgArgHisThr-71
 97-HisThrProArgArgAlaValPro-104
 156-AspGlnValArgPheValAlaGluArgIleGluPro-167

759**AMPHI Regions** - AMPHI

8-ProPheCysSerValLeuSerThrLeuGlyLeu-18
 35-TyrGlnTyrPheArgAspPheAlaGlu-43
 63-LysIleLeuGlyArgValLeuAsnGlyIlePro-73
 94-TyrValAsnSerVal-98
 140-ArgLeuAsnLysLeuValThrGluIle-148
 185-ThrGlnGlnValArgLysAlaAsp-192
 207-GlyGlyThrProLeu-211
 261-LeuSerThrTyrAlaGlyPheAspAsnPhePheAsnLys-273
 282-IleArgSerThrIle-286
 313-ThrLeuGlnGlyLeu-317
 408-LysGlyAspArgLeuSerLysLeuGlyAla-417
 446-AlaSerAspGlySerLysGlnAla-453
 548-ValTyrGluTyrIle-552
 597-GluGlnValAlaGlnAlaGlu-603
 764-LysThrProGluCysTyrArgSerTyrHisSer-774
 788-GluAsnTyrArgAlaLeu-793
 820-SerIleArgAlaGlyLys-825
 878-ThrLeuAspGlyPheGlyThrPheArgPheLeuThrGlyIle-891
 921-ProGlnThrThrGlu-925
 948-TyrAlaAspLeuGlyAlaTyr-954
 967-LeuTyrAsnProLeuLys-972
 992-TyrAsnGlnLeuGlnAlaThrAspIleSerArgGlnValGln-1005
 1013-GlnAlaLeuGlnAlaTrpGlnAsnSerGln-1022
 1040-LysGlnThrAspProLeuThrGlyIleLeuThr-1050
 1062-SerAlaAspIleCysArgGlnValAlaLysAlaAlaAspThr-1075
 1084-GluLeuAspThrTyr-1088
 1102-AlaArgGlnGlyGlyAspAlaGlnAlaValGluThrAlaArgHisAlaTyrLeuAsnAlaLeuAsnArgLeuSerArgGlnIleHisSerLeu-1132
 1139-IleArgMetProAsnLeuAlaGluLeuIleSerArgSerAlaAsnThrAla-1155
 1168-GlnAlaGlyArgArgIleAspArgHisLeuThrAspPro-1180

1199-GlyThrHisArgProTyrGlnGlnThrThrAsn-1209
1234-ThrAsnAsnArgPheAspGlu-1240
1328-GluIleAsnSerProAlaGlnIle-1335
1346-AspLysThrValGlu-1350
1385-GlnAlaAlaHisGlyThrLeu-1391

Antigenic Index - Jameson-Wolf

29-ValArgAsnAspValAspTyrGlnTyr-37
40-AspPheAlaGluAsnLysGlyAla-47
56-SerIleGlnAspLysGlnGlyLysIleLeu-65
73-ProMetProAspPheArgValSerAsnArgGlnThrAla-85
110-GlyAsnAspThrGlnAsnProGluGluGlnAlaTyr-121
125-LeuValSerArgAsnProHisProAspTyrAspTyrHisLeuProArgLeuAsnLysLeuValThr-146
148-IleSerProThrAla-152
160-GlyAsnGlyGlnProLysAla-166
168-AlaTyrLeuAspThrAspArgPhePro-176
181-LeuGlySerGlyThrGlnGlnValArgLysAlaAspGlyThrArgThrArgThrAlaPro-200
206-ThrGlyGlyThrProLeuLys-212
226-SerLeuThrAspGlnProLeuAsn-233
238-AlaGlyAspSerGlySerPro-244
249-AspLysHisGluAsnArg-254
285-ThrIleArgGlnTyrGluThrArgLeuAspVal-295
303-IleTrpArgAspAsnGlyAsnGlyAsnSerThr-313
316-GlyLeuAsnGluArgIleThr-322
327-AsnProSerLeuAlaProGlnAsnAspSerArgHisMetProSerGluAspAlaGlyLys-346
350-LeuSerSerArgPheAspAsnLysThr-358
364-AsnIleAsnGlnGlyAla-369
382-GlyLysAsnHisThr-386
394-ValAlaAspGlyLysArgValPhe-401
404-ValSerAsnProLysGlyAspArgLeuSerLysLeuGlyAla-417
424-GlyGlnGlyIleAsnGlnGlyAspIleSerIleGlyGluGlyThr-438
444-LysAlaAlaSerAspGlySerLysGlnAla-453
459-IleThrSerGlyArgGlyThr-465
469-AlaAspSerGlnGlnIleLysProGluAsn-478
483-PheArgGlyGlyArgLeuAspLeuAsnGlyAsnAsnLeu-495
501-ArgHisAlaAspGlyGlyAla-507
512-HisAsnProAspGlnAlaAla-518
528-LeuSerProGluHisValGlu-534
538-TrpGlyAsnArgProGlnGlyAsn-545
553-AsnProHisArgAsnArgArgThrAsp-561
566-LysProGlyGlyAsnProArgGlu-573
577-LeuAsnMetLysAsnSerThrSer-584
589-GlyAsnAsnArgGlnGlnAlaAlaGluGlnValAlaGlnAlaGluAsnAlaArgProAspLeu-609
614-GlyTyrLeuGlyGluAsnAlaGlnThrGlyLysAlaAlaProSerTyrSerLysThrAsnGluAlaAlaIle
GluLysThrArgHis-642
650-GlyArgProGluTyrArgTyrAsnGly-658
664-TyrArgProLysArgThrAspSer-671
677-GlyGlyMetAsnLeuAsnGly-683
694-ValSerGlyArgProValProHisAlaTyrAspHisGlnAlaLysArgGluProValLeuGluAsnGluTrp
ThrAspGlySerPheLysAla-724
726-ArgPheThrLeuArgAsnHisAla-733
736-ThrAlaGlyArgAsnThrAlaHisLeuAspGlyAspIleThr-749
761-ThrGlnGlyLysThrProGluCysTyrArgSerTyrHisSerGlySerThrHis-778
785-LeuLysAlaGluAsnTyrArg-791
796-ThrGlnValArgGlyAspIleThrLeuAsnAspArgSerGluLeuArgLeuGlyLys-814

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820-SerIleArgAlaGlyLysAspThrAlaValArgMetGluAlaAspSerAsnTrpThr-838
840-SerGlnSerSerHisThrGly-846
859-ProAspPheAlaAsnAsnThrHisAsnAsnArgPheAsn-871
877-GlyThrLeuAspGly-881
891-IleValArgLysGlnAsnAlaProProLeuLysLeuGluGlyAspSerArgGlyAla-909
914-ValLysAsnThrGlyGlnGluProGlnThrThrGluSer-926
932-LeuAsnProLysHisSerHisGln-939
957-IleLeuArgLysAsnAsnAsnGlyTyr-965
969-AsnProLeuLysGluAlaGluLeuGlnIleGluAlaThrArgAlaGluHisGluArgAsnGlnGlnAla-991
999-AspIleSerArgGlnValGlnHisAspSerAspAlaThrArgGlnAla-1014
1018-TrpGlnAsnSerGlnThrGluLeuAlaArgIleAspSerGln-1031
1039-LeuLysGlnThrAspProLeuThr-1046
1064-AspIleCysArgGlnValAlaLysAlaAlaAspThrAsnAsp-1077
1083-ThrGluLeuAspThrTyrIleGluArgValGluMetAlaGluSerGluLeuAspLysAlaArgGlnGlyGlyAspAlaGlnAla-1110
1123-AsnArgLeuSerArg-1127
1147-LeuIleSerArgSerAlaAsnThrAlaValSerGlu-1158
1160-AlaAlaTyrAsnThrGlyArgGlnGlnAlaGlyArgArgIleAspArgHisLeuThrAspProGlnGlnGlnAsn-1184
1188-GluThrGlyThrGlnGlnThrAspTyrHisSerGlyThrHisArgProTyrGlnGlnThrThrAsn-1209
1219-IleThrAspArgLeuSer-1224
1229-LeuThrAspGluArgThrAsnAsnArgPheAspGluGlyValSerAlaArgAsnArgSerAsnGly-1250
1255-ValLysGlyGluAsnGlyAla-1261
1269-GlyTyrSerAsnSerArgThrArgPheThrAspTyrAspGlyAlaAlaValArg-1286
1288-HisAlaTrpAspAlaGlyIleAsnThrGlyIleLysIleAspThrGlyIle-1304
1313-ArgIleAsnArgSerAsnGlyAsnArgTyrVal-1323
1326-GlyAlaGluIleAsnSerProAlaGlnIleGln-1336
1343-IleArgLeuAspLysThrValGlu-1350
1360-PheSerSerAspTyrTyrHisThrArgGlnAsnSerGlySerAla-1374
1376-SerValAsnAspArgThrLeu-1382
1398-AlaGlyTyrLysGlyTrpAsn-1404
1411-TyrGlyLysAspSerAsnThrAlaArgHisLysGlnAlaGly-1424

Hydrophilic Regions - Hopp-Woods

29-ValArgAsnAspValAsp-34
40-AspPheAlaGluAsnLysGly-46
56-SerIleGlnAspLysGlnGlyLysIleLeu-65
75-ProAspPheArgValSerAsnArgGlnThr-84
111-AsnAspThrGlnAsnProGluGluGlnAlaTyr-121
129-AsnProHisProAspTyr-134
140-ArgLeuAsnLysLeuValThr-146
162-GlyGlnProLysAla-166
170-LeuAspThrAspArg-174
186-GlnGlnValArgLysAlaAspGlyThrArgThrArgThr-198
249-AspLysHisGluAsn-253
285-ThrIleArgGlnTyrGluThrArgLeuAspVal-295
306-AspAsnGlyAsnGly-310
317-LeuAsnGluArgIleThr-322
332-ProGlnAsnAspSerArgHisMetProSerGluAspAlaGlyLys-346
352-SerArgPheAspAsnLysThr-358
395-AlaAspGlyLysArg-399
406-AsnProLysGlyAspArgLeuSerLys-414
444-LysAlaAlaSerAspGlySerLysGlnAla-453
472-GlnGlnIleLysProGlu-477

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484-ArgGlyGlyArgLeuAspLeuAsnGly-492
 501-ArgHisAlaAspGlyGly-506
 555-HisArgAsnArgArgThrAsp-561
 568-GlyGlyAsnProArgGlu-573
 591-AsnArgGlnGlnAlaAlaGluGlnValAlaGlnAlaGluAsnAlaArgProAsp-608
 619-AsnAlaGlnThrGlyLysAlaAlaProSerTyrSerLysThrAsnGluAlaAlaIleGluLysThrArgHis
 -642
 652-ProGluTyrArgTyr-656
 664-TyrArgProLysArgThrAspSer-671
 705-HisGlnAlaLysArgGluProValLeu-713
 736-ThrAlaGlyArgAsn-740
 744-LeuAspGlyAspIleThr-749
 764-LysThrProGluCysTyrArg-770
 785-LeuLysAlaGluAsnTyrArg-791
 797-GlnValArgGlyAspIleThrLeuAsnAspArgSerGluLeuArgLeuGlyLys-814
 822-ArgAlaGlyLysAspThrAlaValArgMetGluAlaAspSer-835
 891-IleValArgLysGlnAsnAlaPro-898
 900-LeuLysLeuGluGlyAspSerArgGly-908
 916-AsnThrGlyGlnGluProGlnThrThrGlu-925
 934-ProLysHisSerHis-938
 957-IleLeuArgLysAsnAsnAsn-963
 970-ProLeuLysGluAlaGluLeuGlnIleGluAlaThrArgAlaGluHisGluArgAsnGlnGln-990
 1004-ValGlnHisAspSerAspAlaThrArgGlnAla-1014
 1021-SerGlnThrGluLeuAlaArgIleAspSer-1030
 1039-LeuLysGlnThrAspPro-1044
 1064-AspIleCysArgGlnValAlaLysAlaAlaAspThrAsnAsp-1077
 1087-ThrTyrIleGluArgValGluMetAlaGluSerGluLeuAspLysAlaArgGlnGlyGlyAspAlaGlnAl
 a-1110
 1164-ThrGlyArgGlnGlnAlaGlyArgArgIleAspArgHisLeuThrAspProGlnGln-1182
 1200-ThrHisArgProTyrGln-1205
 1219-IleThrAspArgLeuSer-1224
 1229-LeuThrAspGluArgThrAsnAsnArgPheAspGluGlyValSerAlaArgAsnArgSerAsnGly-1250
 1272-AsnSerArgThrArgPheThrAspTyrAspGlyAlaAlaValArg-1286
 1298-IleLysIleAspThr-1302
 1313-ArgIleAsnArgSerAsnGly-1319
 1326-GlyAlaGluIleAsnSer-1331
 1343-IleArgLeuAspLysThrValGlu-1350
 1376-SerValAsnAspArgThrLeu-1382
 1411-TyrGlyLysAspSerAsnThrAlaArgHisLysGlnAlaGly-1424
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AMPHI Regions - AMPHI

16-ThrValLeuAlaAlaLeuSerSer-23

29-GlnThrGluGlyLeu-33

40-GlyGlnArgSerTyr-44

58-PheAlaAlaThrValGlyThrLys-65

67-ProAlaSerLeuArgGluIleProGlnSerVal-77

88-ArgAsnValAspThrPheAspGlnLeuAlaArg-98

131-ProAlaGlnMetGlnSerIleAsnGlyThrLeuProAsnLeuPheAlaPheAspArgValGluValMetArg
 GlyProSerGlyLeuPheAspSerSerGlyGluMetGlyGlyIleValAsnLeuValArgLysArgProThrLysA
 laPheGlnGlyHisAlaAlaAla-187

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190-GlyThrHisLysGln-194

277-SerLeuProGlnHis-281

296-HisAspValPheAlaAspLeuLysHis-304

334-LeuAsnAsnThrGlyGlnAla-340

381-ArgLeuArgSerThr 385AsnGluGlnGlyArgSerThr-392

398-AlaLeuAspGlyPheArgAlaLeuPro-406

419-LysGlyPheAsnHisSer-424

438-LysThrValPheArgProLeuGluGlyLeuSerLeuIleAlaGly-452

465-GlyLysThrLeuHisLysAlaSerLys-473

515-ProArgGluGlyAsnGln-520

565-GlyLysArgValMetGluGlyValGlu-573

617-AlaAsnLeuTrpThrThrTyr-623

635-ValAsnAlaMetSerGlyIleThrSerSer-644

650-GlyGlyTyrAlaThrPheAspAlaMetAlaAla-660

Antigenic Index - Jameson-Wolf

29-GlnThrGluGlyLeuGlu-34

37-HisIleLysGlyGlnArgSer TyrAsn-45

48-AlaThrGluLysAsnGlyAspTyrSerSer-57

68-AlaSerLeuArgGluIleProGln-75

83-GlnGlnValLysAspArgAsnValAspThrPheAspGlnLeuAlaArgLysThrProGlyLeuArgValLeuSerAsnAspAspGlyArgSer-113

118-ArgGlyTyrGluTyrSerGluTyrAsnIleAspGlyLeu-130

148-AspArgValGluValMetArgGlyProSerGlyLeuPheAspSerSerGlyGluMetGlyGly-168

173-ValArgLysArgProThrLysAlaPhe-181

190-GlyThrHisLysGlnTyrLysAlaGluAlaAspValSerGlySerLeuAsnSerAspGlySerValArgGlyArgVal-215

221-GlyAlaSerProArgProAlaGluLysAsnAsnArgArgGluThr-235

242-TrpAspIleAsnProAspThrValLeu-250

257-GlnGlnArgArgLeuAlaProTyrAsn-265

268-ProAlaAspAlaAsnAsnLysLeuProSerLeu-278

306-PheGlyAsnGlyGlyTyrGly-312

314-ValGlyMetArgTyrSerAspArgLysAlaAspSerAsnTyr-327

330-AlaGlySerLysLeuAsnAsnThrGlyGlnAlaAsp-341

346-GlyThrAspIleLysGlnLysAlaPheAlaValAspAlaSerTyrSerArgProPhe-364

378-AspTyrAsnArgLeuArgSerThrAsnGluGlnGlyArgSerThrLeuSerLysSerValAla-398

413-AsnAlaArgAlaGlyAsnLysGlyPheAsn-422

424-SerValThrGluGluAsnLeuAspGluThrGlyLeu-435

451-AlaGlyGlyArgValGlyHisHisLysIleGluSerGlyAspGlyLysThrLeuHisLysAlaSerLysThrLysPhe-476

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485-AspIleAspGlySerAsnSerLeu-492
501-ThrProGlnThrSerIleGlyThrAspGlyLysLeuLeuLysProArgGluGlyAsnGln-520
524-GlyTyrLysGlySerTyrMetAspAspArgLeuAsnThr-536
542-ArgMetLysAspLysAsnAla-548
551-ProLeuAspSerAsnAsnLysLysThrArgTyr-561
563-AlaLeuGlyLlGluThrGluIle-576
596-GlnIleLysThrAlaSerAsnSerArgAspGluGlyIle-608
614-LysHisSerAlaAsnLeu-619
663-PheThrProLysLeuLysLeu-669
671-IleAsnAlaAspAsnIlePhe-677
685-ValGlySerGluSerThrPheAsnIleProGlySerGluArgSerLeu-700

Hydrophilic Regions - Hopp-Woods

39-LysGlyGlnArgSer-43
48-AlaThrGluLysAsnGlyAsp-54

68-AlaSerLeuArgGluIleProGln-75
84-GlnValLysAspArgAsnValAspThr-92

94-AspGlnLeuAlaArgLysThrProGly-102

106-LeuSerAsnAspAspGlyArgSer-113

148-AspArgValGluValMetArgGlyPro-156

162-SerSerGlyGluMet-166

173-ValArgLysArgProThrLys-179

193-LysGlnTyrLysAlaGluAlaAspVal-201
205-LeuAsnSerAspGlySerValArgGlyArgVal-215

222-AlaSerProArgProAlaGluLysAsnAsnArgArgGluThr-235

242-TrpAspIleAsnPro-246

257-GlnGlnArgArgLeuAla-262

268-ProAlaAspAlaAsnAsnLysLeu-275

314-ValGlyMetArgTyrSerAspArgLysAlaAspSer-325

247-ThrAspIleLysGlnLysAlaPheAla-355
378-AspTyrAsnArgLeuArgSerThrAsnGluGlnGlyArgSerThrLeuSer-394

414-AlaArgAlaGlyAsnLysGlyPhe-421

425-ValThrGluGluAsnLeuAspGlu-432

454-ArgValGlyHisHisLysIleGluSerGlyAspGlyLysThrLeuHisLysAlaSerLysThrLysPhe-476

506-IleGlyThrAspGlyLysLeuLeuLysProArgGluGlyAsnGln-520

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528-SerTyrMetAspAspArgLeuAsnThr-536

542-ArgMetLysAspLysAsnAla-548

551-ProLeuAspSerAsnAsnLysLysThrArgTyr-561

563-AlaLeuGlyLysArgValMetGluGlyValGluThrGluIle-576

597-IleLysThrAlaSerAsnSerArgAspGluGly-607

695-GlySerGluArgSerLeu-700

761**AMPHI Regions - AMPHI**

51-LysGlyTyrIleAsn-55

70-GluThrProGlnThrIleAspThrLeuAsnIle-80

89-AsnAspLeuSerSerIleLeuGlu-96

125-TyrArgAspGlyValArg-130

137-ArgSerThrAlaAsn-141

143-GluArgValGluIleLeuLysGlyProSer-152

164-ValIleAsnMetValSerLysTyrAlaAsnPheLysGlnSerArgAsnIleGlyAlaValTyrGlySerTrpAla-188

249-TyrAspAsnValGluArgThrProAspArgSerProThrLysSerVal-264

316-AspPheAspHisPheTyrAla-322

388-IleAsnProTyrAspArg-393

452-SerSerArgGlnTyr-456

475-HisThrLeuTyrAlaSerTyrAsnLysGlyPhe-485

511-TyrThrArgGlnTyrGlu-516

526-AspArgLeuSerThrThr-531

568-LeuSerAlaIleGlyGlnIleIle-575

608-AsnThrSerAsnVal-612

651-LeuProGlyPheAlaArgValAspAlaMet-660

Antigenic Index - Jameson-Wolf

23-AlaAspThrGlnAspAsnGlyGluHis-31

43-GlyGlnSerAspThrSerValLeu-50

54-IleAsnTyrAspGluAlaAlaValThrArgAsnGlyGlnLeuIleLysGluThrProGlnThrIle-75

79-AsnIleGlnLysAsnLysAsnTyrGlyThrAsnAsp-90

97-GlyAsnAlaGlyIle-101

103-AlaAlaTyrAspMetArgGlyGluSerIlePhe-113

117-PheGlnAlaAspAlaSerAspIleTyrArgAspGlyValArgGluSerGlyGlnValArgArgSerThrAlaAsnIleGluArgValGluIleLeuLysGlyProSerSer-153

157-GlyArgThrAsnGlyGlyGly-163

172-AlaAsnPheLysGlnSerArgAsnIleGly-181

187-TrpAlaAsnArgSerLeuAsnMetAspIle-196

198-GluValLeuAsnLysAsnValAlaIle-206

208-LeuThrGlyGluValGlyArgAlaAsnSerPheArgSerGlyIleAspSerLysAsnVal-227

235-ValLysLeuAspAsnGlyLeuLysTrpThrGlyGlnTyrThrTyrAspAsnValGluArgThrProAspArgSerProThrLysSerValTyrAspArgPheGlyLeuProTyr-272

276-PheAlaHisArgAsnAspPheValLysAspLysLeuGln-288

290-TrpArgSerAspLeuGluTyrAlaPheAsnAspLysTrpArgAlaGlnTrp-306

312-ThrAlaAlaGlnAspPhe-317

322-AlaGlySerGluAsnGlyAsnLeuIleLysArgAsnTyrAlaTrpGlnGlnThrAspAsnLysThrLeuSer-345

366-GlyMetAspTyrSerArgGluHisArgAsnProThrLeu-378

389-AsnProTyrAspArgAlaSerTrpProAlaSerGlyArgLeuGlnPro-404

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407-ThrGlnAsnArgHisLysAlaAspSer-415
 425-SerAlaThrProAspLeuLysPheValLeuGlyGlyArgTyrAspLysTyrThrPheAsnSerGluAsnLys
 LeuThrGlySerSerArgGlnTyrSerGlyHisSerPheSerProAsn-464
 481-TyrAsnLysGlyPheAlaProTyrGlyGlyArgGlyGly-493
 506-AsnAlaAspProGluTyrThrArgGlnTyrGluThrGlyValLysSerSerTrpLeuAspAspArgLeuSer
 Thr-530
 539-ArgPheAsnIleArgTyrArgProAspProLysAsnAsnPro-552
 557-ValSerGlyLysHisArgSerArgGlyValGlu-567
 575-IleProLysLysLeuTyrLeu-581
 591-LysValValGluAspLysGluAsnProAspArgValGly-603
 607-AsnAsnThrSerAsnVal-612
 619-ArgTyrThrProThrGluAsnLeuTyr-627
 634-GlyThrGlyLysArgTyrGlyTyrAsnSerArgAsnLysGluValThrThr-650
 663-TrpAsnHisLysAsn-667
 678-LeuAsnGlnLysTyrTrpArgSerAspSerMetProGlyAsnProArgGlyTyrThrAla-697

Hydrophilic Regions - Hopp-Woods

24-AspThrGlnAspAsnGlyGlu-30
 43-GlyGlnSerAspThrSerVal-49
 57-AspGluAlaAlaValThrArg-63
 66-GlnLeuIleLysGluThrProGlnThr-74
 81-GlnLysAsnLysAsnTyrGly-87
 105-TyrAspMetArgGlyGluSerIlePhe-113
 117-PheGlnAlaAspAlaSerAspIleTyrArgAspGlyValArgGluSerGlyGlnValArgArgSerThrAla
 AsnIleGluArgValGluIleLeuLysGlyProSer-152
 175-LysGlnSerArgAsn-179
 208-LeuThrGlyGluValGlyArg-214
 220-SerGlyIleAspSerLysAsn-226
 235-ValLysLeuAspAsn-239
 251-AsnValGluArgThrProAspArgSerProThr-261
 278-HisArgAsnAspPheValLysAspLysLeuGln-288
 312-ThrAlaAlaGlnAspPhe-317
 324-SerGluAsnGlyAsnLeuIleLys-331
 339-ThrAspAsnLysThrLeu-344
 368-AspTyrSerArgGluHisArgAsnPro-376
 390-ProTyrAspArgAlaSer-395
 409-AsnArgHisLysAlaAspSer-415
 436-GlyArgTyrAspLys-440
 445-SerGluAsnLysLeuThrGlySerSerArgGlnTyrSer-457
 507-AlaAspProGluTyrThrArgGlnTyrGluThrGlyVal-519
 523-TrpLeuAspAspArgLeuSer-529
 544-TyrArgProAspProLysAsn-550
 559-GlyLysHisArgSerArgGlyValGlu-567
 591-LysValValGluAspLysGluAsnProAspArgValGly-603
 634-GlyThrGlyLysArgTyrGlyTyr-641
 643-SerArgAsnLysGluValThr-649
 686-AspSerMetProGlyAsnProArgGlyTyrThr-696

762**AMPHI Regions - AMPHI**

1-MetLysTrpLeuLeuAsnMetIleMetArgProIleLysPheSerMetValAsnThrLeuLeuPheIleValIle
 eCysSerSerPhePheAspLeuLeuValGlnLeuCysThrIleLeuPheHisSerGlnLysIleTyrPheIleThr
 LeuPheLeuLeuPheIlePheAsnPheValThrLysSerIleTyrMetAlaIleIleTyrProIleLeuTyrPheP
 heThrIleLysLysTyrTyrProTyrSerArgLysValIleIleLeuLeuSerLeuAlaLeuSerIleTyrPheSe

rPheMetAspPheTyrPhePheSerIleTyrSerAspAsnLeuSerTyrGluThrGluProLeuHisLeuTyrIle
ProIleIleIleAsnPhePheSerLeuLeuValSerAsnPheIleLeuSerPheIleAsnLys-147

Antigenic Index - Jameson-Wolf

1-MetLysTrpLeuLeuAsnMetIleMetArgProIleLysPheSerMetValAsnThrLeuLeuPheIleValIle
eCysSerSerPhePheAspLeuLeuValGlnLeuCysThrIleLeuPheHisSerGlnLysIleTyrPheIleThr
LeuPheLeuLeuPheIlePheAsnPheValThrLysSerIleTyrMetAlaIleIleTyrProIleLeuTyrPheP
heThrIleLysLysTyrTyrProTyrSerArgLysValIleIleLeuLeuSerLeuAlaLeuSerIleTyrPheSe
rPheMetAspPheTyrPhePheSerIleTyrSerAspAsnLeuSerTyrGluThrGluProLeuHisLeuTyrIle
ProIleIleIleAsnPhePheSerLeuLeuValSerAsnPheIleLeuSerPheIleAsnLys-147

Hydrophilic Regions - Hopp-Woods

1-MetLysTrpLeuLeuAsnMetIleMetArgProIleLysPheSerMetValAsnThrLeuLeuPheIleValIle
eCysSerSerPhePheAspLeuLeuValGlnLeuCysThrIleLeuPheHisSerGlnLysIleTyrPheIleThr
LeuPheLeuLeuPheIlePheAsnPheValThrLysSerIleTyrMetAlaIleIleTyrProIleLeuTyrPheP
heThrIleLysLysTyrTyrProTyrSerArgLysValIleIleLeuLeuSerLeuAlaLeuSerIleTyrPheSe
rPheMetAspPheTyrPhePheSerIleTyrSerAspAsnLeuSerTyrGluThrGluProLeuHisLeuTyrIle
ProIleIleIleAsnPhePheSerLeuLeuValSerAsnPheIleLeuSerPheIleAsnLys-147

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AMPHI Regions - AMPHI

1-MetThrLeuLeuAsnLeuMetIleMetGlnAspTyrGlyIleSerValCysLeuThrLeuThrProTyrLeuGl
nHisGluLeuPheSerAlaMetLysSerTyrPheSerLysTyrIleLeuProValSerLeuPheThrLeuProLeu
SerLeuSerProSerValSerAlaPheThrLeuProGluAlaTrpArgAlaAlaGlnGlnHisSerAlaAspPheG
lnAlaSerHisTyrGlnArgAspAlaValArgAlaArgGlnGlnGlnAlaLysAlaAlaPheLeuProHisValSe
rAlaAsnAlaSerTyrGlnArgGlnProProSerIleSerSerThrArgGluThrGlnGlyTrpSerValGlnVal
GlyGlnThrLeuPheAspAlaAlaLysPheAlaGlnTyrArgGlnSerArgPheAspThrGlnAlaAlaGluGlnA
rgPheAspAlaAlaArgGluGluLeuLeuLeuLysValAlaGluSerTyrPheAsnValLeuLeuSerArgAspTh
rValAlaAlaHisAlaAlaGluLysGluAlaTyrAlaGlnGlnValArgGlnAlaGlnAlaLeuPheAsnLysGly
AlaAlaThrAlaLeuAspIleHisGluAlaLysAlaGlyTyrAspAsnAlaLeuAlaGlnGluIleAlaValLeuA
laGluLysGlnThrTyrGluAsnGlnLeuAsnAspTyrThrAspLeuAspSerLysGlnIleGluAlaIleAspTh
rAlaAsnLeuLeuAlaArgTyrLeuProLysLeuGluArgTyrSerLeuAspGluTrpGlnArgIleAlaLeuSer
AsnAsnHisGluTyrArgMetGlnGlnLeuAlaLeuGlnSerSerGlyGlnAlaLeuArgAlaAlaGlnAsnSerA
rgTyrProThrValSerAlaHisValGlyTyrGlnAsnAsnLeuTyrThrSerSerAlaGlnAsnAsnAspTyrHi
sTyrArgGlyLysGlyMetSerValGlyValGlnLeuAsnLeuProLeuTyrThrGlyGlyGluLeuSerGlyLys
IleHisGluAlaGluAlaGlnTyrGlyAlaAlaGluAlaGlnLeuThrAlaThrGluArgHisIleLysLeuAlaV
alArgGlnAlaTyrThrGluSerGlyAlaAlaArgTyrGlnIleMetAlaGlnGluArgValLeuGluSerSerAr
gLeuLysLeuLysSerThrGluThrGlyGlnGlnTyrGlyIleArgAsnArgLeuGluValIleArgAlaArgGln
GluValAlaGlnAlaGluGlnLysLeuAlaGlnAlaArgTyrLysPheMetLeuAlaTyrLeuArgLeuValLysG
luSerGlyLeuGlyLeuGluThrValPheAlaGlu-467

Antigenic Index - Jameson-Wolf

1-MetThrLeuLeuAsnLeuMetIleMetGlnAspTyrGlyIleSerValCysLeuThrLeuThrProTyrLeuGl
nHisGluLeuPheSerAlaMetLysSerTyrPheSerLysTyrIleLeuProValSerLeuPheThrLeuProLeu
SerLeuSerProSerValSerAlaPheThrLeuProGluAlaTrpArgAlaAlaGlnGlnHisSerAlaAspPheG
lnAlaSerHisTyrGlnArgAspAlaValArgAlaArgGlnGlnGlnAlaLysAlaAlaPheLeuProHisValSe
rAlaAsnAlaSerTyrGlnArgGlnProProSerIleSerSerThrArgGluThrGlnGlyTrpSerValGlnVal
GlyGlnThrLeuPheAspAlaAlaLysPheAlaGlnTyrArgGlnSerArgPheAspThrGlnAlaAlaGluGlnA
rgPheAspAlaAlaArgGluGluLeuLeuLeuLysValAlaGluSerTyrPheAsnValLeuLeuSerArgAspTh
rValAlaAlaHisAlaAlaGluLysGluAlaTyrAlaGlnGlnValArgGlnAlaGlnAlaLeuPheAsnLysGly
AlaAlaThrAlaLeuAspIleHisGluAlaLysAlaGlyTyrAspAsnAlaLeuAlaGlnGluIleAlaValLeuA
laGluLysGlnThrTyrGluAsnGlnLeuAsnAspTyrThrAspLeuAspSerLysGlnIleGluAlaIleAspTh
rAlaAsnLeuLeuAlaArgTyrLeuProLysLeuGluArgTyrSerLeuAspGluTrpGlnArgIleAlaLeuSer
AsnAsnHisGluTyrArgMetGlnGlnLeuAlaLeuGlnSerSerGlyGlnAlaLeuArgAlaAlaGlnAsnSerA
rgTyrProThrValSerAlaHisValGlyTyrGlnAsnAsnLeuTyrThrSerSerAlaGlnAsnAsnAspTyrHi
sTyrArgGlyLysGlyMetSerValGlyValGlnLeuAsnLeuProLeuTyrThrGlyGlyGluLeuSerGlyLys

IleHisGluAlaGluAlaGlnTyrGlyAlaAlaGluAlaGlnLeuThrAlaThrGluArgHisIleLysLeuAlaValArgGlnAlaTyrThrGluSerGlyAlaAlaArgTyrGlnIleMetAlaGlnGluArgValLeuGluSerSerArgLeuLysLeuLysSerThrGluThrGlyGlnGlnTyrGlyIleArgAsnArgLeuGluValIleArgAlaArgGlnGluValAlaGlnAlaGluGlnLysLeuAlaGlnAlaArgTyrLysPheMetLeuAlaTyrLeuArgLeuValLysGluSerGlyLeuGlyLeuGluThrValPheAlaGlu-467

Hydrophilic Regions - Hopp-Woods

1-MetThrLeuLeuAsnLeuMetIleMetGlnAspTyrGlyIleSerValCysLeuThrLeuThrProTyrLeuGlnHisGluLeuPheSerAlaMetLysSerTyrPheSerLysTyrIleLeuProValSerLeuPheThrLeuProLeuSerLeuSerProSerValSerAlaPheThrLeuProGluAlaTrpArgAlaAlaGlnGlnHisSerAlaAspPheGlnAlaSerHisTyrGlnArgAspAlaValArgAlaArgGlnGlnGlnAlaLysAlaAlaPheLeuProHisValSerAlaAsnAlaSerTyrGlnArgGlnProProSerIleSerSerThrArgGluThrGlnGlyTrpSerValGlnValGlyGlnThrLeuPheAspAlaAlaLysPheAlaGlnTyrArgGlnSerArgPheAspThrGlnAlaAlaGluGlnArgPheAspAlaAlaArgGluGluLeuLeuLysValAlaGluSerTyrPheAsnValLeuLeuSerArgAspThrValAlaAlaHisAlaAlaGluLysGluAlaTyrAlaGlnGlnValArgGlnAlaGlnAlaLeuPheAsnLysGlyAlaAlaThrAlaLeuAspIleHisGluAlaLysAlaGlyTyrAspAsnAlaLeuAlaGlnGluIleAlaValLeuAlaGluLysGlnThrTyrGluAsnGlnLeuAsnAspTyrThrAspLeuAspSerLysGlnIleGluAlaIleAspThrAlaAsnLeuLeuAlaArgTyrLeuProLysLeuGluArgTyrSerLeuAspGluTrpGlnArgIleAlaLeuSerAsnAsnHisGluTyrArgMetGlnGlnLeuAlaLeuGlnSerSerGlyGlnAlaLeuArgAlaAlaGlnAsnSerArgTyrProThrValSerAlaHisValGlyTyrGlnAsnAsnLeuTyrThrSerSerAlaGlnAsnAspTyrHisTyrArgGlyLysGlyMetSerValGlyValGlnLeuAsnLeuProLeuTyrThrGlyGlyGluLeuSerGlyLysIleHisGluAlaGluAlaGlnTyrGlyAlaAlaGluAlaGlnLeuThrAlaThrGluArgHisIleLysLeuAlaValArgGlnAlaTyrThrGluSerGlyAlaAlaArgTyrGlnIleMetAlaGlnGluArgValLeuGluSerSerArgLeuLysLeuLysSerThrGluThrGlyGlnGlnTyrGlyIleArgAsnArgLeuGluValIleArgAlaArgGlnGluValAlaGlnAlaGluGlnLysLeuAlaGlnAlaArgTyrLysPheMetLeuAlaTyrLeuArgLeuValLysGluSerGlyLeuGlyLeuGluThrValPheAlaGlu-467

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AMPHI Regions - AMPHI

1-MetPhePheSerAlaLeuLysSerPheLeuSerArgTyrIleThrValTrpArgAsnValTrpAlaValArgAspGlnLeuLysProProLysArgThrAlaGluGluGlnAlaPheLeuProAlaHisLeuGluLeuThrAspThrProValSerAlaAlaProLysTrpAlaAlaArgPheIleMetAlaPheAlaLeuLeuAlaLeuLeuTrpSerTrpPheGlyLysIleAspIleValAlaAlaAlaSerGlyLysThrValSerGlyGlyArgSerLysThrIleGlnProLeuGluThrAlaValValLysAlaValHisValArgAspGlyGlnHisValLysGlnGlyGluThrLeuAlaGluLeuGluAlaValGlyThrAspSerAspValValGlnSerGluGlnAlaLeuGlnAlaAlaGlnLeuSerLysLeuArgTyrGluAlaValLeuAlaAlaLeuGluSerArgThrValProHisIleAspMetAlaGlnAlaArgSerLeuGlyLeuSerAspAlaAspValGlnSerAlaGlnValLeuAlaGlnHisGlnTyrGlnAlaTrpAlaAlaGlnAspAlaGlnLeuGlnSerAlaLeuArgGlyHisGlnAlaGluLeuGlnSerAlaLysAlaGlnGluGlnLysLeuValSerValGlyAlaIleGluGlnGlnLysThrAlaAspTyrArgArgLeuArgAlaAspAsnPheIleSerGluHisAlaPheLeuGluGlnGlnSerLysSerValSerAsnTrpAsnAspLeuGluSerThrArgGlyGlnMetArgGlnIleGlnAlaAlaIleAlaGlnAlaGluGlnAsnArgValLeuAsnThrGlnAsnLeuLysArgAspThrLeuAspAlaLeuArgGlnAlaAsnGluGlnIleAspGlnTyrArgGlyGlnThrAspLysAlaLysGlnArgGlnGlnLeuMetThrIleGlnSerProAlaAspGlyThrValGlnGluLeuAlaThrTyrThrValGlyGlyValValGlnAlaAlaGlnLysMetMetValIleAlaProAspAspAspLysMetAspValGluValLeuValLeuAsnLysAspIleGlyPheValGluGlnGlyGlnAspAlaValValLysIleGluSerPheProTyrThrArgTyrGlyTyrLeuThrGlyLysValLysSerValSerHisAspAlaValSerHisGluGlnLeuGlyLeuValTyrThrAlaValValSerLeuAspLysHisThrLeuAsnIleAspGlyLysAlaValAsnLeuThrAlaGlyMetAsnValThrAlaGluIleLysThrGlyLysArgArgValLeuAspTyrLeuLeuSerProLeuGlnThrLysLeuAspGluSerPheArgGluArg-475

Antigenic Index - Jameson-Wolf

1-MetPhePheSerAlaLeuLysSerPheLeuSerArgTyrIleThrValTrpArgAsnValTrpAlaValArgAspGlnLeuLysProProLysArgThrAlaGluGluGlnAlaPheLeuProAlaHisLeuGluLeuThrAspThrProValSerAlaAlaProLysTrpAlaAlaArgPheIleMetAlaPheAlaLeuLeuAlaLeuLeuTrpSerTrpPheGlyLysIleAspIleValAlaAlaAlaSerGlyLysThrValSerGlyGlyArgSerLysThrIleGlnProLeuGluThrAlaValValLysAlaValHisValArgAspGlyGlnHisValLysGlnGlyGluThrLeuAlaGluLeuGluAlaValGlyThrAspSerAspValValGlnSerGluGlnAlaLeuGlnAlaAlaGlnLeuSerLysLeuArgTyrG

-317-

luAlaValLeuAlaAlaLeuGluSerArgThrValProHisIleAspMetAlaGlnAlaArgSerLeuGlyLeuSer
 rAspAlaAspValGlnSerAlaGlnValLeuAlaGlnHisGlnTyrGlnAlaTrpAlaAlaGlnAspAlaGlnLeu
 GlnSerAlaLeuArgGlyHisGlnAlaGluLeuGlnSerAlaLysAlaGlnGluGlnLysLeuValSerValGlyA
 laIleGluGlnGlnLysThrAlaAspTyrArgArgLeuArgAlaAspAsnPheIleSerGluHisAlaPheLeuGl
 uGlnGlnSerLysSerValSerAsnTrpAsnAspLeuGluSerThrArgGlyGlnMetArgGlnIleGlnAlaAla
 IleAlaGlnAlaGluGlnAsnArgValLeuAsnThrGlnAsnLeuLysArgAspThrLeuAspAlaLeuArgGlnA
 laAsnGluGlnIleAspGlnTyrArgGlyGlnThrAspLysAlaLysGlnArgGlnGlnLeuMetThrIleGlnSe
 rProAlaAspGlyThrValGlnGluLeuAlaThrTyrThrValGlyGlyValValGlnAlaAlaGlnLysMetMet
 ValIleAlaProAspAspAspLysMetAspValGluValLeuValLeuAsnLysAspIleGlyPheValGluGlnG
 lyGlnAspAlaValValLysIleGluSerPheProTyrThrArgTyrGlyTyrLeuThrGlyLysValLysSerVa
 lSerHisAspAlaValSerHisGluGlnLeuGlyLeuValTyrThrAlaValValSerLeuAspLysHisThrLeu
 AsnIleAspGlyLysAlaValAsnLeuThrAlaGlyMetAsnValThrAlaGluIleLysThrGlyLysArgArgV
 alLeuAspTyrLeuLeuSerProLeuGlnThrLysLeuAspGluSerPheArgGluArg-475

Hydrophilic Regions - Hopp-Woods

1-MetPhePheSerAlaLeuLysSerPheLeuSerArgTyrIleThrValTrpArgAsnValTrpAlaValArgAs
 pGlnLeuLysProProLysArgThrAlaGluGluGlnAlaPheLeuProAlaHisLeuGluLeuThrAspThrPro
 ValSerAlaAlaProLysTrpAlaAlaArgPheIleMetAlaPheAlaLeuLeuAlaLeuLeuTrpSerTrpPheG
 lyLysIleAspIleValAlaAlaAlaSerGlyLysThrValSerGlyGlyArgSerLysThrIleGlnProLeuGl
 uThrAlaValValLysAlaValHisValArgAspGlyGlnHisValLysGlnGlyGluThrLeuAlaGluLeuGlu
 AlaValGlyThrAspSerAspValValGlnSerGluGlnAlaLeuGlnAlaAlaGlnLeuSerLysLeuArgTyrG
 luAlaValLeuAlaAlaLeuGluSerArgThrValProHisIleAspMetAlaGlnAlaArgSerLeuGlyLeuSe
 rAspAlaAspValGlnSerAlaGlnValLeuAlaGlnHisGlnTyrGlnAlaTrpAlaAlaGlnAspAlaGlnLeu
 GlnSerAlaLeuArgGlyHisGlnAlaGluLeuGlnSerAlaLysAlaGlnGluGlnLysLeuValSerValGlyA
 laIleGluGlnGlnLysThrAlaAspTyrArgArgLeuArgAlaAspAsnPheIleSerGluHisAlaPheLeuGl
 uGlnGlnSerLysSerValSerAsnTrpAsnAspLeuGluSerThrArgGlyGlnMetArgGlnIleGlnAlaAla
 IleAlaGlnAlaGluGlnAsnArgValLeuAsnThrGlnAsnLeuLysArgAspThrLeuAspAlaLeuArgGlnA
 laAsnGluGlnIleAspGlnTyrArgGlyGlnThrAspLysAlaLysGlnArgGlnGlnLeuMetThrIleGlnSe
 rProAlaAspGlyThrValGlnGluLeuAlaThrTyrThrValGlyGlyValValGlnAlaAlaGlnLysMetMet
 ValIleAlaProAspAspAspLysMetAspValGluValLeuValLeuAsnLysAspIleGlyPheValGluGlnG
 lyGlnAspAlaValValLysIleGluSerPheProTyrThrArgTyrGlyTyrLeuThrGlyLysValLysSerVa
 lSerHisAspAlaValSerHisGluGlnLeuGlyLeuValTyrThrAlaValValSerLeuAspLysHisThrLeu
 AsnIleAspGlyLysAlaValAsnLeuThrAlaGlyMetAsnValThrAlaGluIleLysThrGlyLysArgArgV
 alLeuAspTyrLeuLeuSerProLeuGlnThrLysLeuAspGluSerPheArgGluArg-475

765

AMPHI Regions - AMPHI

36-SerAlaIleSerSerPheCys-42
 45-LysIleIleHisThrTyr-50
 59-ValIleGlyIleIleAsnGly-65
 105-ArgPheLeuAsnArgGly-110
 147-PheGlyLeuCysTyrPro-152

Antigenic Index - Jameson-Wolf

10-GlyAsnPheLysLysIleAlaThr-17
 19-GlnGlyLeuAspArgLysTyr-25
 76-ValLysAsnLysGlnLysPheLeu-83
 106-PheLeuAsnArgGlyMetLys-112
 132-LeuAsnGluGluGlyGlyTrpMet-139
 160-LeuSerArgAspTyrLysHisIle-167

Hydrophilic Regions - Hopp-Woods

11-AsnPheLysLysIleAlaThr-17
 19-GlnGlyLeuAspArgLys-24
 76-ValLysAsnLysGlnLysPheLeu-83
 133-AsnGluGluGlyGly-137

162-ArgAspTyrLysHis-166

767

AMPHI Regions - AMPHI

1-MetLysLeuLysHisLeuLeuProLeuLeuLeuSerAlaValLeuSerAlaGlnAlaTyrAlaLeuThrGluGlyGluAspTyrLeuValLeuAspLysProIleProGlnGluGlnSerGlyLysIleGluValLeuGluPhePheGlyTyrPheCysValHisCysHisHisPheAspProLeuLeuLeuLysLeuGlyLysAlaLeuProSerAspAlaTyrLeuArgThrGluHisValValTrpGlnProGluMetLeuGlyLeuAlaArgMetAlaAlaAlaValAsnLeuSerGlyLeuLysTyrGlnAlaAsnProAlaValPheLysAlaValTyrGluGlnLysIleArgLeuGluAsnArgSerValAlaGlyLysTrpAlaLeuSerGlnLysGlyPheAspGlyLysLysLeuMetArgAlaTyrAspSerProGluAlaAlaAlaAlaAlaLeuLysMetGlnLysLeuThrGluGlnTyrArgIleAspSerThrProThrValIleValGlyGlyLysTyrArgValIlePheAsnAsnGlyPheAspGlyGlyValHisThrIleLysGluLeuValAlaLysValArgGluGluArgLysArgGlnThrProAlaValGlnLys-214

Antigenic Index - Jameson-Wolf

1-MetLysLeuLysHisLeuLeuProLeuLeuLeuSerAlaValLeuSerAlaGlnAlaTyrAlaLeuThrGluGlyGluAspTyrLeuValLeuAspLysProIleProGlnGluGlnSerGlyLysIleGluValLeuGluPhePheGlyTyrPheCysValHisCysHisHisPheAspProLeuLeuLeuLysLeuGlyLysAlaLeuProSerAspAlaTyrLeuArgThrGluHisValValTrpGlnProGluMetLeuGlyLeuAlaArgMetAlaAlaAlaValAsnLeuSerGlyLeuLysTyrGlnAlaAsnProAlaValPheLysAlaValTyrGluGlnLysIleArgLeuGluAsnArgSerValAlaGlyLysTrpAlaLeuSerGlnLysGlyPheAspGlyLysLysLeuMetArgAlaTyrAspSerProGluAlaAlaAlaAlaAlaLeuLysMetGlnLysLeuThrGluGlnTyrArgIleAspSerThrProThrValIleValGlyGlyLysTyrArgValIlePheAsnAsnGlyPheAspGlyGlyValHisThrIleLysGluLeuValAlaLysValArgGluGluArgLysArgGlnThrProAlaValGlnLys-214

Hydrophilic Regions - Hopp-Woods

1-MetLysLeuLysHisLeuLeuProLeuLeuLeuSerAlaValLeuSerAlaGlnAlaTyrAlaLeuThrGluGlyGluAspTyrLeuValLeuAspLysProIleProGlnGluGlnSerGlyLysIleGluValLeuGluPhePheGlyTyrPheCysValHisCysHisHisPheAspProLeuLeuLeuLysLeuGlyLysAlaLeuProSerAspAlaTyrLeuArgThrGluHisValValTrpGlnProGluMetLeuGlyLeuAlaArgMetAlaAlaAlaValAsnLeuSerGlyLeuLysTyrGlnAlaAsnProAlaValPheLysAlaValTyrGluGlnLysIleArgLeuGluAsnArgSerValAlaGlyLysTrpAlaLeuSerGlnLysGlyPheAspGlyLysLysLeuMetArgAlaTyrAspSerProGluAlaAlaAlaAlaAlaLeuLysMetGlnLysLeuThrGluGlnTyrArgIleAspSerThrProThrValIleValGlyGlyLysTyrArgValIlePheAsnAsnGlyPheAspGlyGlyValHisThrIleLysGluLeuValAlaLysValArgGluGluArgLysArgGlnThrProAlaValGlnLys-214

768

AMPHI Regions - AMPHI

23-ProGlnLysProValSerAlaAlaGlnThr-32
60-ProValAspGlnIleValArgArgIleHisGluAlaAla-72
93-LeuGlnGluLeuLysLysAlaGlyTyrThrAsnValAlaAsnHisGly-108

Antigenic Index - Jameson-Wolf

21-AlaAlaProGlnLysProValSer-28
42-ValArgSerGluGlnGluPheSerGluGlyHis-52
63-GlnIleValArgArgIleHisGluAlaAlaProAspLysAspThrPro-78
82-TyrCysArgSerGlyArgArgAlaGluAlaAlaLeuGlnGluLeuLysLysAlaGlyTyr-101
106-AsnHisGlyGlyTyrGluAspLeuLeuLysLysGlyMetLys-119

Hydrophilic Regions - Hopp-Woods

22-AlaProGlnLysProValSer-28
42-ValArgSerGluGlnGluPheSerGlu-50
63-GlnIleValArgArgIleHisGluAlaAlaProAspLysAspThrPro-78
84-ArgSerGlyArgArgAlaGluAlaAlaLeuGlnGluLeuLysLysAlaGly-100
109-GlyTyrGluAspLeuLeuLysLysGlyMetLys-119

769

AMPHI Regions - AMPHI

1-LeuIleMetValIlePheTyrPheCysGlyLysThrPheMetProAlaArgAsnArgTrpMetLeuLeuLeuProLeuLeuAlaSerAlaAlaTyrAlaGluGluThrProArgGluProAspLeuArgSerArgProGluPheArgLeuHisGluAlaGluValLysProIleAspArgGluLysValProGlyGlnValArgGluLysGlyLysValLeuGlnIleAspGlyGluThrLeuLeuLysAsnProGluLeuLeuSerArgAlaMetTyrSerAlaValValSerAsnAsnIleAlaGlyIleArgValIleLeuProIleTyrLeuGlnGlnAlaGlnGlnAspLysMetLeuAlaLeuTyrAlaGlnGlyIleLeuAlaGlnAlaAspGlyArgValLysGluAlaIleSerHisTyrArgGluLeuIleAlaAlaGlnProAspAlaProAlaValArgMetArgLeuAlaAlaAlaLeuPheGluAsnArgGlnAsnGluAlaAlaAlaAspGlnPheAspArgLeuLysAlaGluAsnLeuProProGlnLeuMetGluGlnValGluLeuTyrArgLysAlaLeuArgGluArgAspAlaTrpLysValAsnGlyGlyPheSerValThrArgGluHisAsnIleAsnGlnAlaProLysArgGlnGlnTyrGlyLysTrpThrPheProLysGlnValAspGlyThrAlaValAsnTyrArgLeuGlyAlaGluLysLysTrpSerLeuLysAsnGlyTrpTyrThrThrAlaGlyGlyAspValSerGlyArgValTyrProGlyAsnLysLysPheAsnAspMetThrAlaGlyValSerGlyGlyIleGlyPheAlaAspArgArgLysAspAlaGlyLeuAlaValPheHisGluArgArgThrTyrGlyAsnAspAlaTyrSerTyrThrAsnGlyAlaArgLeuTyrPheAsnArgTrpGlnThrProLysTrpGlnThrLeuSerSerAlaGluTrpGlyArgLeuLysAsnThrArgArgAlaArgSerAspAsnThrHisLeuGlnIleSerAsnSerLeuValPheTyrArgAsnAlaArgGlnTyrTrpMetGlyGlyLeuAspPheTyrArgGluArgAsnProAlaAspArgGlyAspAsnPheAsnArgTyrGlyLeuArgPheAlaTrpGlyGlnGluTrpGlyGlySerGlyLeuSerSerLeuLeuArgLeuGlyAlaAlaLysArgHisTyrGluLysProGlyPhePheSerGlyPheLysGlyGluArgArgArgAspLysGluLeuAsnThrSerLeuSerLeuTrpHisArgAlaLeuHisPheLysGlyIleThrProArgLeuThrLeuSerHisArgGluThrArgSerAsnAspValPheAsnGluTyrGluLysAsnArgAlaPheValGluPheAsnLysThrPhe-490

Antigenic Index - Jameson-Wolf

1-LeuIleMetValIlePheTyrPheCysGlyLysThrPheMetProAlaArgAsnArgTrpMetLeuLeuLeuProLeuLeuAlaSerAlaAlaTyrAlaGluGluThrProArgGluProAspLeuArgSerArgProGluPheArgLeuHisGluAlaGluValLysProIleAspArgGluLysValProGlyGlnValArgGluLysGlyLysValLeuGlnIleAspGlyGluThrLeuLeuLysAsnProGluLeuLeuSerArgAlaMetTyrSerAlaValValSerAsnAsnIleAlaGlyIleArgValIleLeuProIleTyrLeuGlnGlnAlaGlnGlnAspLysMetLeuAlaLeuTyrAlaGlnGlyIleLeuAlaGlnAlaAspGlyArgValLysGluAlaIleSerHisTyrArgGluLeuIleAlaAlaGlnProAspAlaProAlaValArgMetArgLeuAlaAlaAlaLeuPheGluAsnArgGlnAsnGluAlaAlaAlaAspGlnPheAspArgLeuLysAlaGluAsnLeuProProGlnLeuMetGluGlnValGluLeuTyrArgLysAlaLeuArgGluArgAspAlaTrpLysValAsnGlyGlyPheSerValThrArgGluHisAsnIleAsnGlnAlaProLysArgGlnGlnTyrGlyLysTrpThrPheProLysGlnValAspGlyThrAlaValAsnTyrArgLeuGlyAlaGluLysLysTrpSerLeuLysAsnGlyTrpTyrThrThrAlaGlyGlyAspValSerGlyArgValTyrProGlyAsnLysLysPheAsnAspMetThrAlaGlyValSerGlyGlyIleGlyPheAlaAspArgArgLysAspAlaGlyLeuAlaValPheHisGluArgArgThrTyrGlyAsnAspAlaTyrSerTyrThrAsnGlyAlaArgLeuTyrPheAsnArgTrpGlnThrProLysTrpGlnThrLeuSerSerAlaGluTrpGlyArgLeuLysAsnThrArgArgAlaArgSerAspAsnThrHisLeuGlnIleSerAsnSerLeuValPheTyrArgAsnAlaArgGlnTyrTrpMetGlyGlyLeuAspPheTyrArgGluArgAsnProAlaAspArgGlyAspAsnPheAsnArgTyrGlyLeuArgPheAlaTrpGlyGlnGluTrpGlyGlySerGlyLeuSerSerLeuLeuArgLeuGlyAlaAlaLysArgHisTyrGluLysProGlyPhePheSerGlyPheLysGlyGluArgArgArgAspLysGluLeuAsnThrSerLeuSerLeuTrpHisArgAlaLeuHisPheLysGlyIleThrProArgLeuThrLeuSerHisArgGluThrArgSerAsnAspValPheAsnGluTyrGluLysAsnArgAlaPheValGluPheAsnLysThrPhe-490

Hydrophilic Regions - Hopp-Woods

1-LeuIleMetValIlePheTyrPheCysGlyLysThrPheMetProAlaArgAsnArgTrpMetLeuLeuLeuProLeuLeuAlaSerAlaAlaTyrAlaGluGluThrProArgGluProAspLeuArgSerArgProGluPheArgLeuHisGluAlaGluValLysProIleAspArgGluLysValProGlyGlnValArgGluLysGlyLysValLeuGlnIleAspGlyGluThrLeuLeuLysAsnProGluLeuLeuSerArgAlaMetTyrSerAlaValValSerAsnAsnIleAlaGlyIleArgValIleLeuProIleTyrLeuGlnGlnAlaGlnGlnAspLysMetLeuAlaLeuTyrAlaGlnGlyIleLeuAlaGlnAlaAspGlyArgValLysGluAlaIleSerHisTyrArgGluLeuIleAlaAlaGlnProAspAlaProAlaValArgMetArgLeuAlaAlaAlaLeuPheGluAsnArgGlnAsnGluAlaAlaAlaAspGlnPheAspArgLeuLysAlaGluAsnLeuProProGlnLeuMetGluGlnValGluLeuTyrArgLysAlaLeuArgGluArgAspAlaTrpLysValAsnGlyGlyPheSerValThrArgGluHisAsnIleAsnGlnAlaProLysArgGlnGlnTyrGlyLysTrpThrPheProLysGlnValAspGlyThrAlaValAsnTyrArgLeuGlyAlaGluLysLysTrpSerLeuLysAsnGlyTrpTyrThrThrAlaGlyGlyAspValSerGlyArgValTyrProGlyAsnLysLysPheAsnAspMetThrAlaGlyValSerGlyGlyIleGlyPheAlaAspArgArgLysAspAlaGlyLeuAlaValPheH

isGluArgArgThrTyrGlyAsnAspAlaTyrSerTyrThrAsnGlyAlaArgLeuTyrPheAsnArgTrpGlnTh
rProLysTrpGlnThrLeuSerSerAlaGluTrpGlyArgLeuLysAsnThrArgArgAlaArgSerAspAsnThr
HisLeuGlnIleSerAsnSerLeuValPheTyrArgAsnAlaArgGlnTyrTrpMetGlyGlyLeuAspPheTyrA
rgGluArgAsnProAlaAspArgGlyAspAsnPheAsnArgTyrGlyLeuArgPheAlaTrpGlyGlnGluTrpGl
yGlySerGlyLeuSerSerLeuLeuArgLeuGlyAlaAlaLysArgHisTyrGluLysProGlyPhePheSerGly
PheLysGlyGluArgArgArgAspLysGluLeuAsnThrSerLeuSerLeuTrpHisArgAlaLeuHisPheLysG
lyIleThrProArgLeuThrLeuSerHisArgGluThrArgSerAsnAspValPheAsnGluTyrGluLysAsnAr
gAlaPheValGluPheAsnLysThrPhe-490

770

AMPHI Regions - AMPHI

1-MetAsnArgLeuLeuLeuLeuSerAlaAlaValLeuLeuThrAlaCysGlySerGlyGluThrAspLysIleGl
yArgAlaSerThrValPheAsnIleLeuGlyLysAsnAspArgIleGluValGluGlyPheAspAspProAspVal
GlnGlyValAlaCysTyrIleSerTyrAlaLysLysGlyGlyLeuLysGluMetValAsnLeuGluGluAspAlaS
erAspAlaSerValSerCysValGlnThrAlaSerSerIleSerPheAspGluThrAlaValArgLysProLysGl
uValPheLysHisGlyAlaSerPheAlaPheLysSerArgGlnIleValArgTyrTyrAspProLysArgLysThr
PheAlaTyrLeuValTyrSerAspLysIleIleGlnGlySerProLysAsnSerLeuSerAlaValSerCysPheG
lyGlyGlyIleProGlnThrAspGlyValGlnAlaAspThrSerGlyAsnLeuLeuAlaGlyAlaCysMetIleSe
rAsnProIleGluAsnLeuAspLysArg-186

Antigenic Index - Jameson-Wolf

1-MetAsnArgLeuLeuLeuLeuSerAlaAlaValLeuLeuThrAlaCysGlySerGlyGluThrAspLysIleGl
yArgAlaSerThrValPheAsnIleLeuGlyLysAsnAspArgIleGluValGluGlyPheAspAspProAspVal
GlnGlyValAlaCysTyrIleSerTyrAlaLysLysGlyGlyLeuLysGluMetValAsnLeuGluGluAspAlaS
erAspAlaSerValSerCysValGlnThrAlaSerSerIleSerPheAspGluThrAlaValArgLysProLysGl
uValPheLysHisGlyAlaSerPheAlaPheLysSerArgGlnIleValArgTyrTyrAspProLysArgLysThr
PheAlaTyrLeuValTyrSerAspLysIleIleGlnGlySerProLysAsnSerLeuSerAlaValSerCysPheG
lyGlyGlyIleProGlnThrAspGlyValGlnAlaAspThrSerGlyAsnLeuLeuAlaGlyAlaCysMetIleSe
rAsnProIleGluAsnLeuAspLysArg-186

Hydrophilic Regions - Hopp-Woods

1-MetAsnArgLeuLeuLeuLeuSerAlaAlaValLeuLeuThrAlaCysGlySerGlyGluThrAspLysIleGl
yArgAlaSerThrValPheAsnIleLeuGlyLysAsnAspArgIleGluValGluGlyPheAspAspProAspVal
GlnGlyValAlaCysTyrIleSerTyrAlaLysLysGlyGlyLeuLysGluMetValAsnLeuGluGluAspAlaS
erAspAlaSerValSerCysValGlnThrAlaSerSerIleSerPheAspGluThrAlaValArgLysProLysGl
uValPheLysHisGlyAlaSerPheAlaPheLysSerArgGlnIleValArgTyrTyrAspProLysArgLysThr
PheAlaTyrLeuValTyrSerAspLysIleIleGlnGlySerProLysAsnSerLeuSerAlaValSerCysPheG
lyGlyGlyIleProGlnThrAspGlyValGlnAlaAspThrSerGlyAsnLeuLeuAlaGlyAlaCysMetIleSe
rAsnProIleGluAsnLeuAspLysArg-186

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AMPHI Regions - AMPHI

1-MetAspLeuLeuSerValPheHisLysTyrArgLeuLysTyrAlaValAlaValLeuThrIleLeuLeuLeuAl
aAlaValGlyLeuHisAlaSerValTyrArgThrPheThrProGluAsnIleArgSerArgLeuGlnGlnSerIle
AlaHisThrHisArgLysIleSerPheAspAlaAspIleGlnArgArgLeuLeuProArgProThrValIleLeuL
ysAsnLeuThrIleThrGluProGlyGlyAspGlnThrAlaValSerValGlnGluThrLysIleGlyLeuSerTr
pLysAsnLeuTrpSerAspGlnIleGlnIleGluLysTrpValValSerSerAlaGluLeuAlaLeuThrArgAsp
GlyLysGlyValTrpAsnIleGlnAspLeuIleAspSerGlnLysArgGlnAlaSerValAsnArgIleIleValG
luAsnSerThrValArgLeuAsnPheLeuGlnGluGlnLeuIleLeuLysGluIleAsnLeuAsnLeuGlnSerPr
oAspSerSerGlyGlnProPheGluSerSerGlyIleLeuValTrpGlyLysLeuSerValProTrpLysSerArg
GlyLeuPheLeuSerAsnGlyIleGlyProProGluIleSerProPheHisPheGluAlaSerThrSerLeuAspG
lyHisGlyIleThrIleSerThrThrGlySerProSerValArgPheAsnAlaGlyGlyAlaAspAlaAlaGlyLe
uGlyLeuArgAlaAspThrSerPheArgAsnLeuHisLeuThrAlaGlnIleProAlaLeuAlaLeuArgAsnAsn
SerIleLysIleGluThrValAsnGlyAlaPheThrAlaGlyGlyGluTyrAlaArgTrpAspGlySerPheLysL
euAspLysAlaAsnLeuHisSerGlyIleAlaAsnIleGlyAsnAlaGluIleSerGlySerPheLysThrProAr
gHisGlnThrAsnPheSerLeuAsnSerProLeuValTrpThrGluAsnLysGlyLeuAspAlaProArgLeuTyr
ValSerThrLeuGlnAspThrValAsnArgLeuProGlnProArgPheIleSerArgLeuAspGlySerLeuSerV

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alProAsnLeuGlnAsnTrpAsnAlaGluLeuAsnGlyThrPheAspArgGlnThrValAlaAlaLysPheArgTy
rThrHisGluAspAlaProHisLeuGluAlaAlaValAlaLeuGlnLysLeuAsnLeuThrProTyrLeuAspAsp
ValArgGlnGlnAsnGlyLysIlePheProAspThrLeuAlaLysLeuSerGlyAspIleGluAlaHisLeuLysI
leGlyLysValGlnLeuProGlyLeuGlnLeuAspAspMetGluThrTyrLeuHisAlaAspLysGlyHisIleAl
aLeuSerArgPheLysSerGlyLeuTyrGlyGlyHisThrGluGlyGlyIleSerIleAlaAsnThrArgProAla
ThrTyrArgLeuGlnGlnAsnAlaSerAsnIleGlnIleGlnProLeuLeuGlnAspLeuPheGlyPheHisSerP
heSerGlyAsnGlyAspAlaValIleAspLeuThrAlaGlyGlyGluThrArgLysGluLeuIleArgSerLeuGl
nGlySerLeuSerLeuAsnIleSerAsnGlyAlaTrpHisGlyIleAspMetAspAsnIleLeuLysAsnGlyIle
SerGlyLysThrAlaAspAsnAlaAlaProSerThrProPheHisArgPheThrLeuAsnSerGluIleSerAspG
lyIleSerArgHisIleAspThrGluLeuPheSerAspSerLeuTyrValThrSerAsnGlyTyrThrAsnLeuAs
pThrGlnGluLeuSerGluAspValLeuIleArgAsnAlaValHisProLysAsnLysProIleProLeuLysIle
ThrGlyThrValAspLysProSerIleThrValAspTyrGlyArgLeuThrGlyGlyIleAsnSerArgLysGluL
ysGlnLysIleLeuGluAspThrLeuLeuGluGlnTrpGlnTrpLeuLysProLysGluProAla-705

Antigenic Index - Jameson-Wolf

1-MetAspLeuLeuSerValPheHisLysTyrArgLeuLysTyrAlaValAlaValLeuThrIleLeuLeuLeuAl
aAlaValGlyLeuHisAlaSerValTyrArgThrPheThrProGluAsnIleArgSerArgLeuGlnGlnSerIle
AlaHisThrHisArgLysIleSerPheAspAlaAspIleGlnArgArgLeuLeuProArgProThrValIleLeuL
ysAsnLeuThrIleThrGluProGlyGlyAspGlnThrAlaValSerValGlnGluThrLysIleGlyLeuSerTr
pLysAsnLeuTrpSerAspGlnIleGlnIleGluLysTrpValValSerSerAlaGluLeuAlaLeuThrArgAsp
GlyLysGlyValTrpAsnIleGlnAspLeuIleAspSerGlnLysArgGlnAlaSerValAsnArgIleIleValG
luAsnSerThrValArgLeuAsnPheLeuGlnGluGlnLeuIleLeuLysGluIleAsnLeuAsnLeuGlnSerPr
oAspSerSerGlyGlnProPheGluSerSerGlyIleLeuValTrpGlyLysLeuSerValProTrpLysSerArg
GlyLeuPheLeuSerAsnGlyIleGlyProProGluIleSerProPheHisPheGluAlaSerThrSerLeuAspG
lyHisGlyIleThrIleSerThrThrGlySerProSerValArgPheAsnAlaGlyGlyAlaAspAlaAlaGlyLe
uGlyLeuArgAlaAspThrSerPheArgAsnLeuHisLeuThrAlaGlnIleProAlaLeuAlaLeuArgAsnAsn
SerIleLysIleGluThrValAsnGlyAlaPheThrAlaGlyGlyGluTyrAlaArgTrpAspGlySerPheLysL
euAspLysAlaAsnLeuHisSerGlyIleAlaAsnIleGlyAsnAlaGluIleSerGlySerPheLysThrProAr
gHisGlnThrAsnPheSerLeuAsnSerProLeuValTrpThrGluAsnLysGlyLeuAspAlaProArgLeuTyr
ValSerThrLeuGlnAspThrValAsnArgLeuProGlnProArgPheIleSerArgLeuAspGlySerLeuSerV
alProAsnLeuGlnAsnTrpAsnAlaGluLeuAsnGlyThrPheAspArgGlnThrValAlaAlaLysPheArgTy
rThrHisGluAspAlaProHisLeuGluAlaAlaValAlaLeuGlnLysLeuAsnLeuThrProTyrLeuAspAsp
ValArgGlnGlnAsnGlyLysIlePheProAspThrLeuAlaLysLeuSerGlyAspIleGluAlaHisLeuLysI
leGlyLysValGlnLeuProGlyLeuGlnLeuAspAspMetGluThrTyrLeuHisAlaAspLysGlyHisIleAl
aLeuSerArgPheLysSerGlyLeuTyrGlyGlyHisThrGluGlyGlyIleSerIleAlaAsnThrArgProAla
ThrTyrArgLeuGlnGlnAsnAlaSerAsnIleGlnIleGlnProLeuLeuGlnAspLeuPheGlyPheHisSerP
heSerGlyAsnGlyAspAlaValIleAspLeuThrAlaGlyGlyGluThrArgLysGluLeuIleArgSerLeuGl
nGlySerLeuSerLeuAsnIleSerAsnGlyAlaTrpHisGlyIleAspMetAspAsnIleLeuLysAsnGlyIle
SerGlyLysThrAlaAspAsnAlaAlaProSerThrProPheHisArgPheThrLeuAsnSerGluIleSerAspG
lyIleSerArgHisIleAspThrGluLeuPheSerAspSerLeuTyrValThrSerAsnGlyTyrThrAsnLeuAs
pThrGlnGluLeuSerGluAspValLeuIleArgAsnAlaValHisProLysAsnLysProIleProLeuLysIle
ThrGlyThrValAspLysProSerIleThrValAspTyrGlyArgLeuThrGlyGlyIleAsnSerArgLysGluL
ysGlnLysIleLeuGluAspThrLeuLeuGluGlnTrpGlnTrpLeuLysProLysGluProAla-705

Hydrophilic Regions - Hopp-Woods

1-MetAspLeuLeuSerValPheHisLysTyrArgLeuLysTyrAlaValAlaValLeuThrIleLeuLeuLeuAl
aAlaValGlyLeuHisAlaSerValTyrArgThrPheThrProGluAsnIleArgSerArgLeuGlnGlnSerIle
AlaHisThrHisArgLysIleSerPheAspAlaAspIleGlnArgArgLeuLeuProArgProThrValIleLeuL
ysAsnLeuThrIleThrGluProGlyGlyAspGlnThrAlaValSerValGlnGluThrLysIleGlyLeuSerTr
pLysAsnLeuTrpSerAspGlnIleGlnIleGluLysTrpValValSerSerAlaGluLeuAlaLeuThrArgAsp
GlyLysGlyValTrpAsnIleGlnAspLeuIleAspSerGlnLysArgGlnAlaSerValAsnArgIleIleValG
luAsnSerThrValArgLeuAsnPheLeuGlnGluGlnLeuIleLeuLysGluIleAsnLeuAsnLeuGlnSerPr
oAspSerSerGlyGlnProPheGluSerSerGlyIleLeuValTrpGlyLysLeuSerValProTrpLysSerArg
GlyLeuPheLeuSerAsnGlyIleGlyProProGluIleSerProPheHisPheGluAlaSerThrSerLeuAspG
lyHisGlyIleThrIleSerThrThrGlySerProSerValArgPheAsnAlaGlyGlyAlaAspAlaAlaGlyLe

uGlyLeuArgAlaAspThrSerPheArgAsnLeuHisLeuThrAlaGlnIleProAlaLeuAlaLeuArgAsnAsn
 SerIleLysIleGluThrValAsnGlyAlaPheThrAlaGlyGlyGluTyrAlaArgTrpAspGlySerPheLysL
 euAspLysAlaAsnLeuHisSerGlyIleAlaAsnIleGlyAsnAlaGluIleSerGlySerPheLysThrProAr
 gHisGlnThrAsnPheSerLeuAsnSerProLeuValTrpThrGluAsnLysGlyLeuAspAlaProArgLeuTyr
 ValSerThrLeuGlnAspThrValAsnArgLeuProGlnProArgPheIleSerArgLeuAspGlySerLeuSerV
 alProAsnLeuGlnAsnTrpAsnAlaGluLeuAsnGlyThrPheAspArgGlnThrValAlaAlaLysPheArgTy
 rThrHisGluAspAlaProHisLeuGluAlaAlaValAlaLeuGlnLysLeuAsnLeuThrProTyrLeuAspAsp
 ValArgGlnGlnAsnGlyLysIlePheProAspThrLeuAlaLysLeuSerGlyAspIleGluAlaHisLeuLysI
 leGlyLysValGlnLeuProGlyLeuGlnLeuAspAspMetGluThrTyrLeuHisAlaAspLysGlyHisIleAl
 aLeuSerArgPheLysSerGlyLeuTyrGlyGlyHisThrGluGlyGlyIleSerIleAlaAsnThrArgProAla
 ThrTyrArgLeuGlnGlnAsnAlaSerAsnIleGlnIleGlnProLeuLeuGlnAspLeuPheGlyPheHisSerP
 heSerGlyAsnGlyAspAlaValIleAspLeuThrAlaGlyGlyGluThrArgLysGluLeuIleArgSerLeuGl
 nGlySerLeuSerLeuAsnIleSerAsnGlyAlaTrpHisGlyIleAspMetAspAsnIleLeuLysAsnGlyIle
 SerGlyLysThrAlaAspAsnAlaAlaProSerThrProPheHisArgPheThrLeuAsnSerGluIleSerAspG
 lyIleSerArgHisIleAspThrGluLeuPheSerAspSerLeuTyrValThrSerAsnGlyTyrThrAsnLeuAs
 pThrGlnGluLeuSerGluAspValLeuIleArgAsnAlaValHisProLysAsnLysProIleProLeuLysIle
 ThrGlyThrValAspLysProSerIleThrValAspTyrGlyArgLeuThrGlyGlyIleAsnSerArgLysGluL
 ysGlnLysIleLeuGluAspThrLeuLeuGluGlnTrpGlnTrpLeuLysProLysGluProAla-705

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AMPHI Regions - AMPHI

1-MetPheGlyAlaValLeuArgIleAspAlaAspCysLeuGlnIleIleValAlaCysLysLeuPheGlnIleVa
 lAlaTyrGlyPheAlaAlaLeuValGluGlyGluPheHisGluPheGlyLysMetLeuGluIleValArgLeuAla
 AspAlaValPheHisArgAsnHisThrAspAspGlyGlyIleHisPheArgArgArgValGluArgPheGlyArgT
 yrValAsnGlnHisPheHisIleGluLysIleLeuGlnHisHisAlaGlnAlaAlaValValAlaPheArgAr
 gGlyAsnHisThrLeuAspHisPhePheLeuGlnHisLysValHisIleAspAspIleValArgHisLeuArgGln
 LeuGluGlnLysArgCysGlyAsnValValArgGluValAlaAspAspPheLeuPheAlaCysAspAlaValGluI
 leLysLeuGlnTyrIleAlaPheValAsnHisGlnPheIleArgLysArgGlnArgPheGlnThrAlaTyrAspVa
 lAlaValAspPheAspAsnValGlnAlaValGlnLeuPheArgGlnArgPheGlyAsnArgArgGlnThrArgAla
 AspPheAsnHisAspIleIleArgLeuArgAlaHisGlyValAspAsnIleAlaAspAsnProArgValLeuGlnL
 ysIleLeuProGluThrLeuAlaGlyPheValPhePheHisArgValSerPheSerValGluThrProProPheAr
 gAlaValGluSerAspSerIleTrpGluGlyArgAsnSerPheGlnIleArgMetAlaHisArgAlaValLeuTyr
 ValSerSerCysValLeuLysHisLysCysValTyrSerIleArgLeuMetSerAlaLeu-298

Antigenic Index - Jameson-Wolf

1-MetPheGlyAlaValLeuArgIleAspAlaAspCysLeuGlnIleIleValAlaCysLysLeuPheGlnIleVa
 lAlaTyrGlyPheAlaAlaLeuValGluGlyGluPheHisGluPheGlyLysMetLeuGluIleValArgLeuAla
 AspAlaValPheHisArgAsnHisThrAspAspGlyGlyIleHisPheArgArgArgValGluArgPheGlyArgT
 yrValAsnGlnHisPheHisIleGluLysIleLeuGlnHisHisAlaGlnAlaAlaValValAlaPheArgAr
 gGlyAsnHisThrLeuAspHisPhePheLeuGlnHisLysValHisIleAspAspIleValArgHisLeuArgGln
 LeuGluGlnLysArgCysGlyAsnValValArgGluValAlaAspAspPheLeuPheAlaCysAspAlaValGluI
 leLysLeuGlnTyrIleAlaPheValAsnHisGlnPheIleArgLysArgGlnArgPheGlnThrAlaTyrAspVa
 lAlaValAspPheAspAsnValGlnAlaValGlnLeuPheArgGlnArgPheGlyAsnArgArgGlnThrArgAla
 AspPheAsnHisAspIleIleArgLeuArgAlaHisGlyValAspAsnIleAlaAspAsnProArgValLeuGlnL
 ysIleLeuProGluThrLeuAlaGlyPheValPhePheHisArgValSerPheSerValGluThrProProPheAr
 gAlaValGluSerAspSerIleTrpGluGlyArgAsnSerPheGlnIleArgMetAlaHisArgAlaValLeuTyr
 ValSerSerCysValLeuLysHisLysCysValTyrSerIleArgLeuMetSerAlaLeu-298

Hydrophilic Regions - Hopp-Woods

1-MetPheGlyAlaValLeuArgIleAspAlaAspCysLeuGlnIleIleValAlaCysLysLeuPheGlnIleVa
 lAlaTyrGlyPheAlaAlaLeuValGluGlyGluPheHisGluPheGlyLysMetLeuGluIleValArgLeuAla
 AspAlaValPheHisArgAsnHisThrAspAspGlyGlyIleHisPheArgArgArgValGluArgPheGlyArgT
 yrValAsnGlnHisPheHisIleGluLysIleLeuGlnHisHisAlaGlnAlaAlaValValAlaPheArgAr
 gGlyAsnHisThrLeuAspHisPhePheLeuGlnHisLysValHisIleAspAspIleValArgHisLeuArgGln
 LeuGluGlnLysArgCysGlyAsnValValArgGluValAlaAspAspPheLeuPheAlaCysAspAlaValGluI
 leLysLeuGlnTyrIleAlaPheValAsnHisGlnPheIleArgLysArgGlnArgPheGlnThrAlaTyrAspVa

lAlaValAspPheAspAsnValGlnAlaValGlnLeuPheArgGlnArgPheGlyAsnArgArgGlnThrArgAla
AspPheAsnHisAspIleIleArgLeuArgAlaHisGlyValAspAsnIleAlaAspAsnProArgValLeuGlnL
ysIleLeuProGluThrLeuAlaGlyPheValPhePheHisArgValSerPheSerValGluThrProProPheAr
gAlaValGluSerAspSerIleTrpGluGlyArgAsnSerPheGlnIleArgMetAlaHisArgAlaValLeuTyr
ValSerSerCysValLeuLysHisLysCysValTyrSerIleArgLeuMetSerAlaLeu-298

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AMPHI Regions - AMPHI

1-MetGlyLeuGlyAlaThrThrPheValGlySerGlyAlaIleGlyGlyGlyLeuCysSerThrGlyIleGlyCy
sAlaAlaGlyGlyLeuIleAlaThrAlaGlyMetThrGlyGlyTyrThrGlnAlaSerGluGlySerArgGlnLeu
PheGlyThrTyrGlnSerAspPheGlyLysLysValValLeuSerLeuGlyThrProIleGluTyrGluSerProL
euValSerAspAlaLysAsnLeuAlaValTrpGlyLeuGluThrLeuIleThrArgLysLeuGlyAsnLeuAlaTh
rGlyValLysThrSerLeuThrProLysThrAlaAspValGlnArgAsnIleLeuSerGlnSerGluValGlyIle
LysTrpGlyLysGlyIleGluGlyGlnGlyMetProTrpGluAspTyrValGlyLysGlyLeuSerAlaAsnAlaA
rgLeuProLysAsnPheLysThrPheAspTyrPheAspArgGlyThrGlyThrAlaIleSerAlaLysThrLeuAs
pThrGlnThrThrAlaArgLeuSerLysProGluGlnLeuTyrSerThrMetLysGlyTyrIleAspLysThrAla
AsnPheLysSerTyrGluLeuSerGluValProLeuArgAlaAspMetIleLysGlnArgGluIleHisLeuAlaI
leProAlaGlnThrAsnLysGluGlnArgLeuGlnLeuGlnArgValValGluTyrGlyLysSerGlnAsnIleTh
rValLysIleThrGluIleGlu-260

Antigenic Index - Jameson-Wolf

1-MetGlyLeuGlyAlaThrThrPheValGlySerGlyAlaIleGlyGlyGlyLeuCysSerThrGlyIleGlyCy
sAlaAlaGlyGlyLeuIleAlaThrAlaGlyMetThrGlyGlyTyrThrGlnAlaSerGluGlySerArgGlnLeu
PheGlyThrTyrGlnSerAspPheGlyLysLysValValLeuSerLeuGlyThrProIleGluTyrGluSerProL
euValSerAspAlaLysAsnLeuAlaValTrpGlyLeuGluThrLeuIleThrArgLysLeuGlyAsnLeuAlaTh
rGlyValLysThrSerLeuThrProLysThrAlaAspValGlnArgAsnIleLeuSerGlnSerGluValGlyIle
LysTrpGlyLysGlyIleGluGlyGlnGlyMetProTrpGluAspTyrValGlyLysGlyLeuSerAlaAsnAlaA
rgLeuProLysAsnPheLysThrPheAspTyrPheAspArgGlyThrGlyThrAlaIleSerAlaLysThrLeuAs
pThrGlnThrThrAlaArgLeuSerLysProGluGlnLeuTyrSerThrMetLysGlyTyrIleAspLysThrAla
AsnPheLysSerTyrGluLeuSerGluValProLeuArgAlaAspMetIleLysGlnArgGluIleHisLeuAlaI
leProAlaGlnThrAsnLysGluGlnArgLeuGlnLeuGlnArgValValGluTyrGlyLysSerGlnAsnIleTh
rValLysIleThrGluIleGlu-260

Hydrophilic Regions - Hopp-Woods

1-MetGlyLeuGlyAlaThrThrPheValGlySerGlyAlaIleGlyGlyGlyLeuCysSerThrGlyIleGlyCy
sAlaAlaGlyGlyLeuIleAlaThrAlaGlyMetThrGlyGlyTyrThrGlnAlaSerGluGlySerArgGlnLeu
PheGlyThrTyrGlnSerAspPheGlyLysLysValValLeuSerLeuGlyThrProIleGluTyrGluSerProL
euValSerAspAlaLysAsnLeuAlaValTrpGlyLeuGluThrLeuIleThrArgLysLeuGlyAsnLeuAlaTh
rGlyValLysThrSerLeuThrProLysThrAlaAspValGlnArgAsnIleLeuSerGlnSerGluValGlyIle
LysTrpGlyLysGlyIleGluGlyGlnGlyMetProTrpGluAspTyrValGlyLysGlyLeuSerAlaAsnAlaA
rgLeuProLysAsnPheLysThrPheAspTyrPheAspArgGlyThrGlyThrAlaIleSerAlaLysThrLeuAs
pThrGlnThrThrAlaArgLeuSerLysProGluGlnLeuTyrSerThrMetLysGlyTyrIleAspLysThrAla
AsnPheLysSerTyrGluLeuSerGluValProLeuArgAlaAspMetIleLysGlnArgGluIleHisLeuAlaI
leProAlaGlnThrAsnLysGluGlnArgLeuGlnLeuGlnArgValValGluTyrGlyLysSerGlnAsnIleTh
rValLysIleThrGluIleGlu-260

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AMPHI Regions - AMPHI

1-MetLysIleLysLeuProLeuPheIleIleTrpLeuSerValSerAlaSerCysAlaSerValSerProValPr
oAlaGlySerGlnThrGluMetSerThrArgGluAsnAlaSerAspGlyIleProTyrProValProThrLeuGln
AspArgLeuAspTyrLeuGluGlyLysIleValArgLeuSerAsnGluValGluThrLeuAsnGlyLysValLysA
laLeuGluHisAlaLysThrHisSerSerGlyArgAlaTyrValGlnLysLeuAspAspArgLysLeuLysGluHi
sTyrLeuAsnThrGluGlyGlySerAlaSerAlaHisThrValGluThrAlaGlnAsnLeuTyrAsnGlnAlaLeu
LysHisTyrLysSerGlyLysPheSerAlaAlaAlaSerLeuLeuLysGlyAlaAspGlyGlyAspGlyGlySerI
leAlaGlnArgSerMetTyrLeuLeuLeuGlnSerArgAlaArgMetGlyAsnCysGluSerValIleGluIleGl
yGlyArgTyrAlaAsnArgPheLysAspSerProThrAlaProGluAlaMetPheLysIleGlyGluCysGlnTyr

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ArgLeuGlnGlnLysAspIleAlaArgAlaThrTrpArgSerLeuIleGlnThrTyrProGlySerProAlaAlaLysArgAlaAlaAlaAlaValArgLysArg-237

Antigenic Index - Jameson-Wolf

1-MetLysIleLysLeuProLeuPheIleIleTrpLeuSerValSerAlaSerCysAlaSerValSerProValProAlaGlySerGlnThrGluMetSerThrArgGluAsnAlaSerAspGlyIleProTyrProValProThrLeuGlnAspArgLeuAspTyrLeuGluGlyLysIleValArgLeuSerAsnGluValGluThrLeuAsnGlyLysValLysAlaLeuGluHisAlaLysThrHisSerSerGlyArgAlaTyrValGlnLysLeuAspAspArgLysLeuLysGluHisTyrLeuAsnThrGluGlyGlySerAlaSerAlaHisThrValGluThrAlaGlnAsnLeuTyrAsnGlnAlaLeuLysHisTyrLysSerGlyLysPheSerAlaAlaAlaSerLeuLeuLysGlyAlaAspGlyGlyAspGlyGlySerIleAlaGlnArgSerMetTyrLeuLeuLeuGlnSerArgAlaArgMetGlyAsnCysGluSerValIleGluIleGlyGlyArgTyrAlaAsnArgPheLysAspSerProThrAlaProGluAlaMetPheLysIleGlyGluCysGlnTyrArgLeuGlnGlnLysAspIleAlaArgAlaThrTrpArgSerLeuIleGlnThrTyrProGlySerProAlaAlaLysArgAlaAlaAlaAlaValArgLysArg-237

Hydrophilic Regions - Hopp-Woods

1-MetLysIleLysLeuProLeuPheIleIleTrpLeuSerValSerAlaSerCysAlaSerValSerProValProAlaGlySerGlnThrGluMetSerThrArgGluAsnAlaSerAspGlyIleProTyrProValProThrLeuGlnAspArgLeuAspTyrLeuGluGlyLysIleValArgLeuSerAsnGluValGluThrLeuAsnGlyLysValLysAlaLeuGluHisAlaLysThrHisSerSerGlyArgAlaTyrValGlnLysLeuAspAspArgLysLeuLysGluHisTyrLeuAsnThrGluGlyGlySerAlaSerAlaHisThrValGluThrAlaGlnAsnLeuTyrAsnGlnAlaLeuLysHisTyrLysSerGlyLysPheSerAlaAlaAlaSerLeuLeuLysGlyAlaAspGlyGlyAspGlyGlySerIleAlaGlnArgSerMetTyrLeuLeuLeuGlnSerArgAlaArgMetGlyAsnCysGluSerValIleGluIleGlyGlyArgTyrAlaAsnArgPheLysAspSerProThrAlaProGluAlaMetPheLysIleGlyGluCysGlnTyrArgLeuGlnGlnLysAspIleAlaArgAlaThrTrpArgSerLeuIleGlnThrTyrProGlySerProAlaAlaLysArgAlaAlaAlaAlaValArgLysArg-237

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AMPHI Regions - AMPHI

10-GluAlaAlaAlaGluVal-15
44-GlyAsnGlnThrCysSerArgTyrSerAsn-53
89-LysGlnAlaValThr-93
103-ThrGlnAlaTyrAsnGluMetThrLysSerVal-113
166-PheAlaArgThrGlyLysLeu-172
174-GlySerPheAspLeuPheAlaSerVal-182
253-ProSerGluAlaPheAspLeuProGluGlySerThr-264
320-PheLeuArgPheTrpGlnAlaThrArgGlyIle-330

Antigenic Index - Jameson-Wolf

1-MetAlaArgArgSerLysThrPheGluGluAlaAlaAlaGluValGluGluArgPheGlyHisArgGlyIleLys-25
30-GluGlyThrAlaLysProCysVal-37
39-AsnCysProLysHisGlyAsnGlnThrCysSerArgTyrSer-52
57-GlySerSerTrpGlyCysProSerCysGlyAsnGluGlnAlaAla-71
77-ThrLeuArgLysAsnHisIle-83
95-MetThrLysGlnGluArgIleThr-102
123-AspValGlnGlyAspThrThrIle-130
134-HisThrHisThrHisAsnHisSerAspAlaAspGlyLysAlaLeuSer-149
152-LeuThrProArgProLeuLeuSerAspArgGlnAla-163
167-AlaArgThrGlyLysLeuThrGly-174
194-MetProAspThrSerMet-199
201-ProValIleGluLysGlyAsp-207
213-ProArgMetCysProAlaAspGluAspIleAla-223
226-GluLeuSerAspLysArgLeuVal-233
248-TyrGlnThrGlyArgProSerGluAlaPheAspLeuProGluGlySerThr-264
270-LeuGluSerLysAsnGlyLeuCysProProHisArgGlnGluGlyVal-285

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301-SerAlaSerLysThrSerCysThrArgProThrAlaAlaArgLysSerAla-317
 326-AlaThrArgGlyIleProLysThrArgSerTrpArgAsnProAsnAsnAla-342

Hydrophilic Regions - Hopp-Woods

1-MetAlaArgArgSerLysThrPheGluGluAlaAlaAlaGluValGluGluArgPheGlyHisArgGlyIleLys-25
 65-CysGlyAsnGluGlnAlaAla-71
 77-ThrLeuArgLysAsnHisIle-83
 96-ThrLysGlnGluArgIleThr-102
 139-AsnHisSerAspAlaAspGlyLysAlaLeuSer-149
 157-LeuLeuSerAspArgGlnAla-163
 168-ArgThrGlyLysLeu-172
 202-ValIleGluLysGlyAsp-207
 213-ProArgMetCysProAlaAspGluAspIleAla-223
 226-GluLeuSerAspLysArgLeuVal-233
 251-GlyArgProSerGluAlaPheAspLeuProGlu-261
 270-LeuGluSerLysAsnGlyLeu-276
 280-HisArgGlnGluGlyVal-285
 303-SerLysThrSerCysThrArgProThrAlaAlaArgLysSerAla-317
 328-ArgGlyIleProLysThrArgSerTrpArgAsn-338

900-2**AMPHI Regions - AMPHI**

9-ValValAlaPheAlaArgPhe-15
 36-ValGlyLysHisPheArgLysPheHisArgPheArgArgGlyGlu-51
 53-PheValAspPheLysGlnTrpAlaPheValGlyLeuPheArgLeuAlaArgLeuPheHisIleGlyAspAspPheValAspArgPheLeuGlyPhePhe-85
 121-GlyGluGluPheProGluAlaValValGluAlaAlaGlyAspValAlaArgHisPheAspValLeuAspLeuVal-145
 161-SerHisGlnAsnArgIle-166
 198-HisGlnThrLeuGlySerAspAlaGly-206
 210-ValGlnPheHisHisPheGly-216
 233-GlyLysProSerGlyGlyAsnGlyLeuGlyGlyLeuValAsnHisLeuArgLeuValAla-252
 268-IleGluValLeuArgArgAlaAspGlyGly-277
 279-AspGlyAlaAspValValAlaGlnMet-287

Antigenic Index - Jameson-Wolf

1-LeuArgArgValGlyGlyGln-7
 19-GlyValAspPheArgArgGlnLysPhePheGlyPheThrProArgGlnAlaVal-36
 38-LysHisPheArgLysPheHisArgPheArgArgArgGlyGluGly-52
 74-GlyAspAspPheValAspArg-80
 88-PheProLysArgAsnGlyValAla-95
 103-SerValGlnThrAspGlnGluPhe-110
 118-PheGlyGlnGlyGluGluPheProGlu-126
 131-AlaAlaGlyAspValAlaArg-137
 145-ValAlaProAspGly-149
 157-GlnAsnIleGlySerHisGlnAsnArgIleThrGluGlnThrHisPhe-172
 201-LeuGlySerAspAlaGlyGlnAsnProVal-210
 230-GluSerAlaGlyLysProSerGlyGlyAsnGly-240
 252-AlaPheAspAspThrValValIleGlyGluGluGluGlyPheGly-267
 270-ValLeuArgArgAlaAspGlyGlyAlaAspGlyAlaAsp-282
 285-AlaGlnMetArgAspAlaGlyGlyGlyTyrAlaGly-296
 311-MetProSerGluArgGluLysAspValProIle-321
 323-ProAspLeuProProThrSerSerArgGlnGlnThr-334

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Hydrophilic Regions - Hopp-Woods

1-LeuArgArgValGly-5
 20-ValAspPheArgArgGlnLys-26
 38-LysHisPheArgLysPheHisArgPheArgArgArgGlyGluGly-52
 89-ProLysArgAsnGly-93
 105-GlnThrAspGlnGluPhe-110
 120-GlnGlyGluGluPhePro-125
 131-AlaAlaGlyAspValAlaArg-137
 162-HisGlnAsnArgIleThrGlu-168
 201-LeuGlySerAspAlaGlyGln-207
 231-SerAlaGlyLysProSerGly-237
 257-ValValIleGlyGluGluGluGluGlyPheGly-267
 270-ValLeuArgArgAlaAspGlyGlyAlaAspGlyAlaAsp-282
 285-AlaGlnMetArgAspAlaGly-291
 311-MetProSerGluArgGluLysAspValProIle-321
 326-ProProThrSerSerArgGlnGln-333

901-2**AMPHI Regions - AMPHI**

20-GlyLeuPheThrValLeuGly-26
 55-ValSerLeuThrGluIlePheSerLysSer-64
 66-GluAlaPheAlaGluIleTyrAsp-73
 84-AlaPheLeuAlaGlyMetGlyGlyIleAlaLeuIle-95
 97-ArgLeuValProAsnProHisGluThrLeuAsp-107
 124-ValGlyMetMetAlaAlaPhe-130
 136-AsnPheProGluGlyLeuAlaThrPhePheAlaThrLeuGlu-149
 164-HisAsnIleProGluGlyIleSer-171
 190-CysLeuLeuSerGlyLeuAlaGluProLeuGlyAlaAla-202
 217-PheGlySerValPheGlyValIleAlaGlyValMet-228
 143-TyrSerAspGlyHisGlu-248

Antigenic Index - Jameson-Wolf

1-MetProAspPheSerMet-6
 33-SerLysThrProAsnProArgVal-40
 61-PheSerLysSerSerGluAlaPhe-68
 71-IleTyrAspLysAspHisAla-77
 98-LeuValProAsnProHisGluThrLeuAspAlaGlnAspProSerPheGlnGluSerLysArgArgHisIleAla-122
 136-AsnPheProGluGly-140
 179-AlaThrArgSerArgLysLysThr-186
 193-SerGlyLeuAlaGluProLeuGly-200
 235-GluLeuLeuProAlaAlaLysArgTyrSerAspGlyHisGluThr-249

Hydrophilic Regions - Hopp-Woods

61-PheSerLysSerSerGluAlaPhe-68
 71-IleTyrAspLysAspHisAla-77
 102-ProHisGluThrLeuAspAlaGlnAspProSerPheGlnGluSerLysArgArgHisIleAla-122
 180-ThrArgSerArgLysLysThr-186
 235-GluLeuLeuProAlaAlaLysArgTyrSerAspGlyHisGlu-248

902**AMPHI Regions - AMPHI**

1-LeuHisPheGlnArgIleIleLysCysSerGluGlyIleTrpAlaValGlyAlaArgProThrValGlyPhePheGlyLysSerPheLysIleThrCysLysHisValValLeuArgArgArgThrValGlnAlaValAspPheThrThrCysLeuPheAlaValGlyHisPheValAspValProAlaTyrValPheAlaCysAspAlaHisThrGlyGlyValAlaValLysArgValTyrGlyAlaAspValValGlnAsnSerGlyGlyAlaPheCysGlnThrGlnGlyArgArgGly

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nAsnThrValPheGlyIleMetPheGlnIleAlaGluGluProArgProAlaLeuArgAlaAlaProTyrHisAsn
AlaValGlyGlyGlyLeuPheGluAspGlyLeuGlyPheLeuArgArgSerAsnValAlaValAspProAspArgA
spValGlnThrAlaPheGlyPheGlyAspGluPheValThrArgPheAlaPheValHisLeuArgThrArgAlaSe
rValAspGlyLysGlyGlyAspAlaAlaIlePheGlyAspPheGlyAspAspGlyGlnValLeuMetValValVal
ProThrGlnThrGlyPheGluGlyAsnGlyTyrAlaCysArgThrAspAspGlyPheGlnAsnGlyGlyAsnGlnA
rgLeuValLeuHisGlnArgAlaThrGlyLeuAspIleAlaAspPhePheSerGlyThrAlaHisValAspValAs
pLysLeuArgProLysAlaAspValValThrArgGlyIleArgHisLeuLeuArgIleAlaSerGlyAsnLeuHis
GlyAsnAsnAlaAlaPheIleGlyLysIleAlaAlaValGlnGlyPheSerSerIleSerGluArgArgValAlaG
lyGlnHisPheAlaHisArgProThrCysAlaLysIleSerAlaLysSerAlaGluArgPheValGlyAsnAlaAr
gHisArgArgLysCysAspGlyValValAspLysIleAlaAlaAspValHisAsnGlySerAlaPheGlnLysSer
ThrProLeuTyrIlePhe-360

Antigenic Index - Jameson-Wolf

1-LeuHisPheGlnArgIleIleLysCysSerGluGlyIleTrpAlaValGlyAlaArgProThrValGlyPhePh
eGlyLysSerPheLysIleThrCysLysHisValValLeuArgArgArgThrValGlnAlaValAspPheThrThr
CysLeuPheAlaValGlyHisPheValAspValProAlaTyrValPheAlaCysAspAlaHisThrGlyGlyValA
laValLysArgValTyrGlyAlaAspValValGlnAsnSerGlyGlyAlaPheCysGlnThrGlnGlyArgArgGl
nAsnThrValPheGlyIleMetPheGlnIleAlaGluGluProArgProAlaLeuArgAlaAlaProTyrHisAsn
AlaValGlyGlyGlyLeuPheGluAspGlyLeuGlyPheLeuArgArgSerAsnValAlaValAspProAspArgA
spValGlnThrAlaPheGlyPheGlyAspGluPheValThrArgPheAlaPheValHisLeuArgThrArgAlaSe
rValAspGlyLysGlyGlyAspAlaAlaIlePheGlyAspPheGlyAspAspGlyGlnValLeuMetValValVal
ProThrGlnThrGlyPheGluGlyAsnGlyTyrAlaCysArgThrAspAspGlyPheGlnAsnGlyGlyAsnGlnA
rgLeuValLeuHisGlnArgAlaThrGlyLeuAspIleAlaAspPhePheSerGlyThrAlaHisValAspValAs
pLysLeuArgProLysAlaAspValValThrArgGlyIleArgHisLeuLeuArgIleAlaSerGlyAsnLeuHis
GlyAsnAsnAlaAlaPheIleGlyLysIleAlaAlaValGlnGlyPheSerSerIleSerGluArgArgValAlaG
lyGlnHisPheAlaHisArgProThrCysAlaLysIleSerAlaLysSerAlaGluArgPheValGlyAsnAlaAr
gHisArgArgLysCysAspGlyValValAspLysIleAlaAlaAspValHisAsnGlySerAlaPheGlnLysSer
ThrProLeuTyrIlePhe-360

Hydrophilic Regions - Hopp-Woods

1-LeuHisPheGlnArgIleIleLysCysSerGluGlyIleTrpAlaValGlyAlaArgProThrValGlyPhePh
eGlyLysSerPheLysIleThrCysLysHisValValLeuArgArgArgThrValGlnAlaValAspPheThrThr
CysLeuPheAlaValGlyHisPheValAspValProAlaTyrValPheAlaCysAspAlaHisThrGlyGlyValA
laValLysArgValTyrGlyAlaAspValValGlnAsnSerGlyGlyAlaPheCysGlnThrGlnGlyArgArgGl
nAsnThrValPheGlyIleMetPheGlnIleAlaGluGluProArgProAlaLeuArgAlaAlaProTyrHisAsn
AlaValGlyGlyGlyLeuPheGluAspGlyLeuGlyPheLeuArgArgSerAsnValAlaValAspProAspArgA
spValGlnThrAlaPheGlyPheGlyAspGluPheValThrArgPheAlaPheValHisLeuArgThrArgAlaSe
rValAspGlyLysGlyGlyAspAlaAlaIlePheGlyAspPheGlyAspAspGlyGlnValLeuMetValValVal
ProThrGlnThrGlyPheGluGlyAsnGlyTyrAlaCysArgThrAspAspGlyPheGlnAsnGlyGlyAsnGlnA
rgLeuValLeuHisGlnArgAlaThrGlyLeuAspIleAlaAspPhePheSerGlyThrAlaHisValAspValAs
pLysLeuArgProLysAlaAspValValThrArgGlyIleArgHisLeuLeuArgIleAlaSerGlyAsnLeuHis
GlyAsnAsnAlaAlaPheIleGlyLysIleAlaAlaValGlnGlyPheSerSerIleSerGluArgArgValAlaG
lyGlnHisPheAlaHisArgProThrCysAlaLysIleSerAlaLysSerAlaGluArgPheValGlyAsnAlaAr
gHisArgArgLysCysAspGlyValValAspLysIleAlaAlaAspValHisAsnGlySerAlaPheGlnLysSer
ThrProLeuTyrIlePhe-360

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AMPHI Regions - AMPHI

29-GluLeuIleArgSerMetGlnArgGln-37
109-AsnLeuSerArgLeuGlnLysAla-116
191-GluGlnGlyLeuGluAsnLeuArgArgLeuProSerVal-203
240-GlyGlyLysThrThrGlyLysTyr-247
262-SerAspLeuPheTyr-266
315-ArgTyrHisGluAlaThrGlu-321
360-ThrArgGlnThrTyrLysTyrIleAspAsp-369

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560-HisLysProLysGlyPheGlnThrThrAsnThr-570

Antigenic Index - Jameson-Wolf

21-LeuAlaAlaAspGluAsnAspAlaGluLeuIleArgSerMetGlnArgGlnGlnHisIleAsp-41
 48-AlaAsnValArgPheGluGlnProLeuGluLysAsnAsnTyrValLeuSerGluAspGluThrProCysThra
 rg-72
 77-SerLeuAspAspLysThrValArg-84
 106-GlySerAsnAsnLeuSerArgLeuGlnLysAlaAla-117
 135-ProGlnAsnMetAspSerGlyIleLeu-143
 146-ArgValSerAlaGlyGluIleGlyAspIleArgTyrGluGluLysArgAspGlyLysSerAlaGluGlySer
 Ile-170
 178-ProLeuTyrArgAsnLysIleLeuAsn-186

 188-ArgAspValGluGlnGlyLeuGluAsnLeuArgArgLeuProSerValLysThrAspIle-207
 210-IleProSerGluGluGluGlyLysSerAspLeu-220
 223-LysTrpGlnGlnAsnLysProIleArg-231
 234-IleGlyIleAspAspAlaGlyGlyLysThrThrGlyLysTyrGlnGly-249
 256-AspAsnProLeuGly-260
 269-TyrGlyArgGlyLeuAlaHisLysThrAspLeuThrAspAlaThrGlyThrGluThrGluSerGlySerArg
 SerTyr-294
 309-PheAsnHisAsnGlyHisArgTyrHisGluAlaThrGluGlyTyrSerValAsnTyrAspTyrAsnGlyLys
 GlnTyrGln-335
 343-MetLeuTrpArgAsnArgLeuHisLysThrSerVal-354
 362-GlnThrTyrLysTyrIleAspAspAlaGluIleGluValGlnArgArgArgSerAlaGlyTrpGluAlaGlu
 LeuArgHis-388
 395-TrpGlnLeuAspGlyLysLeuSerTyrLysArgGlyThrGlyMetArgGlnSerMetProAlaProGluGlu
 AsnGlyGlyAspIleLeuProGlyThrSerArgMetLysIle-432
 459-GlnTrpAsnLysThrPro-464
 467-AlaGlnAspLysLeuSerIleGlySerArgTyrThrValArgGlyPheAspGlyGluGlnSerLeuPheGly
 GluArgGlyPheTyrTrpGlnAsnThr-499
 514-AlaAspTyrGlyArgValSerGlyGluSerAla-524
 527-ValSerGlyLysGln-531
 539-PheArgGlyGlyHisLysValGly-546
 557-LysProLeuHisLysProLysGlyPheGln-566

Hydrophilic Regions - Hopp-Woods

21-LeuAlaAlaAspGluAsnAspAlaGluLeuIleArgSerMetGlnArgGlnGlnHisIleAsp-41
 48-AlaAsnValArgPheGluGlnProLeuGluLysAsnAsn-60
 63-LeuSerGluAspGluThrProCys-70
 77-SerLeuAspAspLysThrValArg-84
 109-AsnLeuSerArgLeuGlnLysAlaAla-117
 151-GluIleGlyAspIleArgTyrGluGluLysArgAspGlyLysSerAlaGluGlySer-169
 188-ArgAspValGluGlnGlyLeuGluAsnLeuArgArgLeuProSerValLysThrAspIle-207
 211-ProSerGluGluGluGlyLysSerAspLeu-220
 234-IleGlyIleAspAspAlaGlyGlyLysThrThrGlyLysTyr-247
 273-LeuAlaHisLysThrAspLeuThrAsp-281

 283-ThrGlyThrGluThrGluSerGlySerArgSer-293
 315-ArgTyrHisGluAlaThrGlu-321
 366-TyrIleAspAspAlaGluIleGluValGlnArgArgArgSerAlaGlyTrp-382

 384-AlaGluLeuArgHis-388

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399-GlyLysLeuSerTyrLysArgGlyThrGlyMetArgGlnSerMetProAlaProGluGluAsnGlyGly-42
1
428-SerArgMetLysIle-432
467-AlaGlnAspLysLeuSerIle-473
481-GlyPheAspGlyGluGln-486
515-AspTyrGlyArgValSerGlyGluSer-523
558-ProLeuHisLysProLysGly-564

904-2**AMPHI Regions - AMPHI**

23-AspPhePheAsnProPheGlnIleCysPheGlyValPheGlyGlnCysAla-39
55-PheValAsnArgLeuAlaGlyPheHisArgIleGly-66
89-PheAsnAlaValHisTyrIleGluPhe-97
131-GluPheValSerAlaPheCysGlnThrTyr-140
164-AlaGlnAsnIleIleGlnHisLeuArgThrTyrAlaArgAlaCysArgSerCysAlaArgGln-184
193-IleSerAlaValValAspVal-199
202-ArgThrLeuArgAlaPhe-207
250-GlyIleValGlnMetLeu-255
267-GlnPhePheThrGlnPhePheArgMetGlnGlnIleGlyGlyAlaAsn-282
308-ArgCysPheAlaGlyLeuValGlu-315
332-ThrAlaPheAspValPheHisAlaCys-340
364-ValGlnThrPheMetGlnAspAla-371
390-ArgIleValAlaAlaLeu-395
402-GlyPhePheArgGlnProValAsn-409
418-ProLeuCysAlaAspTyrTyrAsnIlePheSerHis-429

Antigenic Index - Jameson-Wolf

11-GlyAlaGlyGlyAspAspGlyAspArgArgAlaAlaAsp-23
66-GlyThrAlaArgGlnAspVal-72
84-AlaAspIleAspGly-88
98-SerAsnThrHisThrGlyAsn-104
106-ValAspLeuAspGly-110
114-GlyGlyGlyIleLys-118
126-SerGlyTyrArgThrGluPhe-132
147-PheGlyArgGluArgAlaArgThrAspAlaArgGlyIleGlyPheAspAspAlaGln-165
173-ThrTyrAlaArgAlaCysArgSerCysAlaArgGlnThrValGlyArgGlyAsnGluGlyIle-193
199-ValGlnGlnArgThrLeuArgAlaPheLys-208
224-HisValGlyAsnHisArgArgAsnAlaArgArgAspPhePheAspAsnArgHisHis-242
261-IleGlyLysAspGlyIle-266
279-GlyGlyAlaAsnGly-283
293-ArgAlaAspAlaAlaAlaGlyArgAla-301
314-ValGluArgAspValValArgGlnAspGlnArgAlaGlyArgArgAspPheGlnThr-332
351-GlyPheGlyGlyAspAspAsnAlaArgThrAspGluAlaVal-364
370-AspAlaAlaArgAsnGlnAlaGlnAsnGly-379
384-AspAsnGlnGlyMet-388
407-ProValAsnAspPhe-411

Hydrophilic Regions - Hopp-Woods

12-AlaGlyGlyAspAspGlyAspArgArgAlaAlaAsp-23
66-GlyThrAlaArgGlnAspVal-72
84-AlaAspIleAspGly-88
147-PheGlyArgGluArgAlaArgThrAspAlaArgGlyIleGlyPheAspAspAlaGln-165
173-ThrTyrAlaArgAlaCysArgSerCysAlaArg-183
185-ThrValGlyArgGlyAsnGluGly-192
199-ValGlnGlnArgThrLeuArgAlaPheLys-208

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226-GlyAsnHisArgArgAsnAlaArgArgAspPhePheAspAsnArgHisHis-242
 261-IleGlyLysAspGly-265
 293-ArgAlaAspAlaAlaAlaGlyArgAla-301
 314-ValGluArgAspValValArgGlnAspGlnArgAlaGlyArgArgAspPheGlnThr-332
 352-PheGlyGlyAspAspAsnAlaArgThrAspGluAlaVal-364
 370-AspAlaAlaArgAsnGlnAla-376

907-2**AMPHI Regions - AMPHI**

42-AspAspValAlaSerValMetArgSer-50
 66-LysGluGlyGluArgTrpLeuSerAlaMetSer-76
 78-ArgLeuAlaArgPheVal-83
 129-GlyAlaArgGlyLeu-133
 142-AsnTyrIleGlyLysProAlaHis-149
 165-LeuArgHisTyrArgAsnLeuGluLysGlyAsn-175
 177-ValArgAlaLeuAlaArgPheAsnGly-185

Antigenic Index - Jameson-Wolf

1-MetArgLysProThrAspThrLeuPro-9
 12-LeuGlnArgArgArgLeuLeu-18
 33-GlyAlaGlnArgGluGluThrLeuAlaAspAspValAlaSer-46
 51-SerValGlySerValAsnProProArgLeuValPheAspAsnProLysGluGlyGluArgTrp-71
 83-ValProGluGluGluGluArgArgArgLeu-92
 97-GlnTyrGluSerSerArgAlaGlyLeu-105
 115-GluValGluSerAlaPhe-120
 142-AsnTyrIleGlyLysProAlaHisAsn-150
 155-ArgThrAsnLeuArgTyrGly-161
 168-TyrArgAsnLeuGluLysGlyAsnIle-176
 184-AsnGlySerLeuGlySerAsnLysTyrProAsnAla-195
 200-TrpArgAsnArgTrpGlnTrp-206

Hydrophilic Regions - Hopp-Woods

1-MetArgLysProThrAsp-6
 12-LeuGlnArgArgArgLeuLeu-18
 33-GlyAlaGlnArgGluGluThrLeuAlaAspAspValAlaSer-46
 60-LeuValPheAspAsnProLysGluGlyGluArgTrp-71
 83-ValProGluGluGluGluArgArgArgLeu-92
 99-GluSerSerArgAlaGlyLeu-105
 115-GluValGluSerAlaPhe-120
 169-ArgAsnLeuGluLysGlyAsnIle-176

908-2**AMPHI Regions - AMPHI**

9-TyrLysGlnAsnLys-13
 26-ThrAlaAlaGluLeu-30
 127-ThrAspCysTyrArgSerTyrAspValLeuAspValArgGluPheSerHisPheSer-145

Antigenic Index - Jameson-Wolf

1-MetArgLysSerArgLeuSerArgTyrLysGlnAsnLysLeu-14
 51-GlnAsnSerProHis-55
 59-PheAspGlyGluValGluAlaAspGluSerTyrPheGlyGlyGlnArgLysGlyLysArgGlyArgGlyAlaAlaGly-84
 91-LeuLeuLysArgAsnGlyLysVal-98
 115-IleArgGluGlnValLysProAspSerIleVal-125
 127-ThrAspCysTyrArgSerTyrAsp-134
 136-LeuAspValArgGlu-140
 161-ArgThrThrLysProTyr-166

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Hydrophilic Regions - Hopp-Woods

1-MetArgLysSerArgLeuSerArgTyrLysGlnAsnLysLeu-14
 59-PheAspGlyGluValGluAlaAspGluSerTyr-69
 72-GlyGlnArgLysGlyLysArgGlyArgGlyAlaAlaGly-84
 92-LeuLysArgAsnGlyLys-97
 115-IleArgGluGlnValLysProAspSer-123
 136-LeuAspValArgGlu-140
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AMPHI Regions - AMPHI

71-GlyAsnAsnAlaAspGlu-76

Antigenic Index - Jameson-Wolf

22-ThrTyrGlnAspGlyAsnGlyLysThrAlaValArgGlnLysTyrProAlaGly-39
 45-GlnAspGlySerTyrSerLysAsnMetAsnTyrAsnGlnTyrArgProGluArgHisAla-64
 68-AsnGlnThrGlyAsnAsnAlaAspGluGluHisArgGlnHisTrpGlnLysProLysPheGlnAsnArg-90

Hydrophilic Regions - Hopp-Woods

23-TyrGlnAspGlyAsnGlyLysThrAlaValArgGlnLysTyr-36
 58-TyrArgProGluArgHisAla-64
 72-AsnAsnAlaAspGluGluHisArgGlnHisTrpGln-83
 85-ProLysPheGlnAsnArg-90
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AMPHI Regions - AMPHI

10-ValSerLeuSerAlaAla-15
 22-SerAlaGluArgGlnIle-27
 39-LysAlaValLysMetLeuGlu-45
 58-AspHisTrpGlyLysPro-63
 69-AlaTyrLysAspGlyArg-74

Antigenic Index - Jameson-Wolf

19-AlaGlyAspSerAlaGluArgGlnIleTyrGlyAspProHisPheGluGlnAsnArgThrLysAlaValLysMetLeuGluGlnArgGlyTyrGln-50
 53-AspValAspAlaAspAspHisTrpGlyLysProValLeuGlu-66
 68-GluAlaTyrLysAspGlyArgGluTyrAsp-77
 83-ProAspLeuLysIleIleLysGluGlnLeuAspArg-94

Hydrophilic Regions - Hopp-Woods

21-AspSerAlaGluArgGlnIleTyr-28
 31-ProHisPheGluGlnAsnArgThrLysAlaValLysMetLeuGluGlnArgGly-48
 53-AspValAspAlaAspAspHisTrpGly-61
 68-GluAlaTyrLysAspGlyArgGluTyrAsp-77
 86-LysIleIleLysGluGlnLeuAspArg-94
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AMPHI Regions - AMPHI

6-LeuGluPheTrpValGlyLeuPhe-13
 43-ValTyrAlaAspPheGlyAspIleGly-51
 97-ValSerAlaGlnIle-101
 118-GlyAspThrGluAsnLeuAla-124
 140-AsnLeuIleGlyLysPheMetThrSerPhe-149

Antigenic Index - Jameson-Wolf

1-MetLysLysAsnIle-5
 35-GlyGlySerAspLysThrTyr-41
 48-GlyAspIleGlyGlyLeuLysValAsnAlaProValLys-60

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74-LeuAspProLysSerTyrGlnAlaArgValArgLeuAspLeuAspGlyLysTyrGlnPheSerSerAspVal-97
 103-ThrSerGlyLeuLeuGly-108
 115-GlnGlnGlyGlyAspThrGluAsn-122
 149-PheAlaGluLysAsnAlaAspGlyGlyAsnAlaGluLysAlaAlaGlu-164

Hydrophilic Regions - Hopp-Woods

1-MetLysLysAsnIle-5
 36-GlySerAspLysThr-40
 74-LeuAspProLysSerTyrGlnAlaArgValArgLeuAspLeuAspGly-89
 116-GlnGlyGlyAspThrGluAsn-122
 149-PheAlaGluLysAsnAlaAspGlyGlyAsnAlaGluLysAlaAlaGlu-164

912**AMPHI Regions - AMPHI**

24-ProAlaAspAlaValSerGlnIle-31
 62-PheAspPheGlnArgMetThrAlaLeuAlaValGlyAsnProTrpArgThrAlaSerAspAlaGlnLys-84
 89-LysGluPheGlnThrLeu-94
 169-TyrArgAsnGlnPheGlyGluIleIleLysAlaLys-180

Antigenic Index - Jameson-Wolf

1-MetLysLysSerSer-5
 29-SerGlnIleArgGlnAsnAlaThrGln-37
 42-LeuLysAsnGlyAspAlaAsnThrAlaArgGlnLysAlaGluAla-56
 74-AsnProTrpArgThrAlaSerAspAlaGlnLysGlnAlaLeuAlaLysGluPhe-91
 104-LeuLysLeuLysAsnAlaAsnValAsnValLysAspAsnProIleValAsnLysGlyGlyLysGluIleIleVal-128
 130-AlaGluValGlyValProGlyGlnLysProValAsn-141
 146-ThrTyrGlnSerGlyGlyLysTyrArgThr-155
 169-TyrArgAsnGlnPhe-173
 177-IleLysAlaLysGlyValAspGlyLeuIleAla-187
 189-LeuLysAlaLysAsnGlyGlyLys-196

Hydrophilic Regions - Hopp-Woods

1-MetLysLysSerSer-5
 31-IleArgGlnAsnAla-35
 43-LysAsnGlyAspAlaAsnThrAlaArgGlnLysAlaGluAla-56
 78-ThrAlaSerAspAlaGlnLysGlnAlaLeuAlaLysGluPhe-91
 104-LeuLysLeuLysAsn-108
 110-AsnValAsnValLysAspAsnProIleVal-119
 121-LysGlyGlyLysGluIleIleVal-128
 134-ValProGlyGlnLysProValAsn-141
 177-IleLysAlaLysGlyValAsp-183
 189-LeuLysAlaLysAsnGlyGlyLys-196

913**AMPHI Regions - AMPHI**

22-GluThrArgProAlaAspProTyrGluGlyTyrAsnArg-34
 53-ArgGlyTyrArgLysValAlaProLys-61
 66-GlyValSerAsnPhePheAsnAsnLeuCysAspValValSer-79
 107-LeuGlyGlyLeuIleAspIleAlaGlyAla-116
 151-ValArgAspAlaLeuGlyThrGlyIleThrSerValTyrSer-164
 193-AspLeuThrAspSerLeuAspGluAlaAla-202
 238-LeuValGluSerAla-242
 257-SerGluThrGlnAla-261

Antigenic Index - Jameson-Wolf

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21-AlaGluThrArgProAlaAspProTyrGluGlyTyrAsn-33
 39-PheAsnAspGlnAlaAspArgTyr-46
 51-AlaAlaArgGlyTyrArgLysValAlaProLysProValArgAla-65
 81-GlySerAsnIleLeu-85
 87-LeuAspIleLysArgAlaSerGluAspLeuVal-97
 117-GlyGlyIleProAspAsnLysAsnThrLeuGlyAsp-128
 132-SerTrpGlyTrpLysAsnSerAsn-139
 149-SerThrValArgAspAlaLeu-155
 163-TyrSerProLysAsnIle-168
 172-ThrProValGlyArgTrpGly-178
 185-ValSerThrArgGluGlyLeuLeuAspLeuThrAspSerLeuAspGluAlaAlaIleAspLysTyrSerTyr
 ThrArgAspLeuTyrMet-214
 216-ValArgAlaArgGlnThrGlyAlaThrProAlaGluGlyThrGluAspAsnIleAspIleAspGluLeuVal
 GluSerAlaGluThrGlyAlaAla-247
 250-AlaValGlnGluAspSerValSerGluThrGlnAlaGluAlaAlaGlyGluAlaGluThrGlnProGlyThr
 GlnPro-275

Hydrophilic Regions - Hopp-Woods

21-AlaGluThrArgProAlaAspProTyrGluGlyTyrAsn-33
 40-AsnAspGlnAlaAsp-44
 53-ArgGlyTyrArgLysValAlaProLysProValArg-64
 87-LeuAspIleLysArgAlaSerGluAspLeuVal-97
 118-GlyIleProAspAsnLysAsnThrLeu-126
 150-ThrValArgAspAlaLeu-155
 186-SerThrArgGluGlyLeuLeuAspLeuThrAspSerLeuAspGluAlaAlaIleAsp-204
 216-ValArgAlaArgGlnThrGly-222
 224-ThrProAlaGluGlyThrGluAspAsnIleAspIleAspGluLeuValGluSerAlaGluThrGlyAlaAla
 -247
 250-AlaValGlnGluAspSerValSerGluThrGlnAlaGluAlaAlaGlyGluAlaGluThrGlnPro-271

914-2**AMPHI Regions - AMPHI**

6-LeuGlyIleLeuThrAlaCysAlaAlaMet-15
 17-AlaPheAlaAspArgIleGlyAspLeu-25
 65-PheGlnLysThrPheGlu-70
 81-GlnLysValArgGlnAlaCys-87

Antigenic Index - Jameson-Wolf

18-PheAlaAspArgIleGlyAspLeuGluAlaArgLeuAlaGlnLeuGluHisArgValAlaValLeuGluSerG
 lyGlyAsnThrValLys-47
 50-LeuPheGlySerAsnSer-55
 64-ProPheGlnLysThrPheGluAlaSerAspArgAsnGluGlyValAlaArgGlnLysValArgGlnAlaCysA
 snArgGluThrSerAla-93
 95-PheCysGluAspGluAlaIleArgCysArgLysPheAsp-107

Hydrophilic Regions - Hopp-Woods

18-PheAlaAspArgIleGlyAspLeuGluAlaArgLeuAlaGlnLeuGluHisArgValAlaVal-38
 67-LysThrPheGluAlaSerAspArgAsnGluGlyValAlaArgGlnLysValArgGlnAlaCysAsnArgGluT
 hrSer-92
 95-PheCysGluAspGluAlaIleArgCysArgLysPheAsp-107

915-2**AMPHI Regions - AMPHI**

9-ValAlaValSerAlaLeuSerAlaCysArgGlnAla-20
 31-IleSerAspArgSerVal-36
 67-SerThrIleLysGlnMetPheGlyTyrThrLysLeuProGluGluProLysGlyIleArgValIleTyrValT
 hrAspMetGlyAsnValThrAspTrpThr-100

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139-GlnAlaGluLysPhe-143

Antigenic Index - Jameson-Wolf

15-SerAlaCysArgGlnAlaGluGluGlyProProProLeuProArgGlnIleSerAspArgSerValGlyHis-38
 43-AsnLeuThrGluHisAsnGlyProLysAla-52
 57-AsnGlyLysProAspGlnProVal-64
 75-TyrThrLysLeuProGluGluProLysGlyIle-85
 97-ThrAspTrpThrAsnProAsnAlaAspThrGluTrpMetAspAlaLysLys-113
 125-GlyMetGlyAlaGluAspAlaLeuProPheGlyAsnLysGluGlnAlaGluLysPheAlaLysAspLysGlyGlyLysValValGlyPheAspAspMetProAspThrTyr-161

Hydrophilic Regions - Hopp-Woods

18-ArgGlnAlaGluGluGlyProProProLeu-27
 30-GlnIleSerAspArgSerVal-36
 46-GluHisAsnGlyProLys-51
 58-GlyLysProAspGln-62
 77-LysLeuProGluGluProLysGlyIle-85
 103-AsnAlaAspThrGluTrpMetAspAlaLysLys-113
 127-GlyAlaGluAspAlaLeu-132
 135-GlyAsnLysGluGlnAlaGluLysPheAlaLysAspLysGlyGlyLys-150
 155-AspAspMetProAsp-159

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AMPHI Regions - AMPHI

6-ProLeuAlaValLeuThrAlaLeuLeuLeu-15
 35-GlnAsnValLeuLysIleTyrAsnTrpSerGluTyrValAspProGluThrValAlaAsp-54
 99-IleLysAlaGlyAlaTyrGlnLysIleAspLysSerLeu-111
 124-ArgLeuMetAspGlyValAspPro-131
 152-ArgValLysLysAlaLeu-157
 188-AspSerAlaAlaGlu-192
 206-AsnSerSerAsnThrGluAspIleArgGluAlaThr-217
 292-AlaLysAsnValAlaAsnAlaHisLysTyrIleAsnAspPheLeuAsp-307
 325-LysProAlaArgGluLeuMetGluAsp-333

Antigenic Index - Jameson-Wolf

18-CysGlyGlySerAspLysProProAlaGluLysProAlaProAlaGluAsnGlnAsnVal-37
 44-SerGluTyrValAspProGluThrValAlaAspPheGluLysLysAsnGlyIleLysValThr-64
 68-TyrAspSerAspGluThrLeuGluSerLysValLeuThrGlyLysSerGlyTyrAsp-86
 102-GlyAlaTyrGlnLysIleAspLysSerLeuIleProAsnTyrLysHisLeuAsnProGluMetMetArgLeuMetAspGlyValAspProGlyHisGluTyr-135
 149-AsnThrGluArgValLysLysAlaLeuGlyThrAspLysLeuProAspAsnGln-166
 171-PheAspProGluTyrThrSerLysLeuLysGlnCysGly-183
 201-LeuGlyLysAsnProAsnSerSerAsnThrGluAspIleArgGluAlaThrAlaLeuLeuLysLysAsnArgProAsnIleLysArgPheThrSerSerGlyPheIle-236
 238-AspLeuAlaArgGlyAspThr-244
 255-AsnIleAlaLysArgArgAlaGluGluAlaGlyGlyLysGluLysIleArgValMetMetProLysGluGlyValGly-280
 287-ValIleProLysAspAlaLysAsnValAlaAsn-297
 305-PheLeuAspProGluValSerAlaLysAsnGlyAsn-316
 320-TyrAlaProSerSerLysProAlaArgGluLeuMetGluAspGluPheLysAsnAspAsnThrIlePheProThrGluGluAspLeuLysAsn-350
 368-GlnTrpGlnAspValLysAlaGlyLys-376

Hydrophilic Regions - Hopp-Woods

19-GlyGlySerAspLysProProAlaGluLysProAlaProAlaGluAsn-34

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47-ValAspProGluThrValAlaAspPheGluLysLysAsnGlyIle-61
68-TyrAspSerAspGluThrLeuGluSerLysValLeuThr-80
105-GlnLysIleAspLysSerLeu-111
121-GluMetMetArgLeuMetAspGlyValAspProGlyHis-133
149-AsnThrGluArgValLysLysAlaLeuGlyThrAspLysLeuProAspAsnGln-166
174-GluTyrThrSerLysLeuLysGln-181
204-AsnProAsnSerSerAsnThrGluAspIleArgGluAlaThrAlaLeuLeuLysLysAsnArgProAsnIle
LysArgPheThr-231
238-AspLeuAlaArgGlyAspThr-244
255-AsnIleAlaLysArgArgAlaGluGluAlaGlyGlyLysGluLysIleArgValMetMetProLysGluGly
-278
290-LysAspAlaLysAsnValAlaAsn-297
305-PheLeuAspProGluValSerAlaLysAsn-314
322-ProSerSerLysProAlaArgGluLeuMetGluAspGluPheLysAsnAspAsn-339
343-ProThrGluGluAspLeuLysAsn-350
370-GlnAspValLysAlaGlyLys-376

919**AMPHI Regions - AMPHI**

12-GlyIleAlaAlaAlaIleLeu-18
24-LysSerIleGlnThrPheProGln-31
37-IleAsnGlyProAspArgProValGlyIleProAsp-48
76-AspPheAlaLysSerLeuGln-82
98-GlnAspValCysAlaGlnAlaPheGlnThrProVal-109
119-GluArgTyrPheThr-123
133-LeuAlaGlyThrValThrGlyTyrTyrGlu-142
161-GlyIleProAspAspPheIleSerValPro-170
176-ArgSerGlyLysAlaLeuValArgIleArgGln-186
191-SerGlyThrIleAspAsnThrGlyGlyThr-200
307-MetGlnGlyIleLysSerTyrMetArgGlnAsnProGlnArgLeuAlaGluValLeu-325
348-AlaLeuGlyThrProLeuMetGlyGluTyrAlaGlyAlaVal-361
382-ArgLysAlaLeuAsnArg-387

Antigenic Index - Jameson-Wolf

21-CysGlnSerLysSerIleGlnThr-28
30-ProGlnProAspThr-34
36-ValIleAsnGlyProAspArgProValGlyIleProAspProAlaGlyThr-52
54-ValGlyGlyGlyGly-58
76-AspPheAlaLysSerLeuGln-82
87-GlyCysAlaAsnLeuLysAsnArgGlnGlyTrpGln-98
121-TyrPheThrProTrp-125
143-ProValLeuLysGlyAspAspArgArgThrAlaGln-154
162-IleProAspAspPheIle-167
173-AlaGlyLeuArgSerGlyLysAlaLeuValArgIleArgGlnThrGlyLysAsnSerGlyThrIleAspAsn
ThrGlyGlyThrHis-201
215-ThrAlaIleLysGlyArgPheGluGlySerArgPheLeuProTyrHisThrArgAsnGlnIleAsnGlyGly
AlaLeuAspGlyLysAlaPro-245
250-AlaGluAspProValGlu-255
262-GlnGlySerGlyArgLeuLysThrProSerGlyLysTyrIleArg-276
278-GlyTyrAlaAspLysAsnGluHisPro-286
293-TyrMetAlaAspLysGlyTyrLeuLysLeuGlyGln-304
308-GlnGlyIleLysSerTyrMetArgGlnAsnProGlnArgLeuAlaGlu-323
326-GlyGlnAsnProSer-330
337-LeuAlaGlySerSerAsnAspGlyProVal-346
359-GlyAlaValAspArgHisTyr-365
379-ProValThrArgLysAlaLeuAsn-386

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393-AspThrGlySerAlaIleLysGlyAlaValArg-403
 409-GlyTyrGlyAspGluAlaGlyGluLeuAlaGlyLysGlnLysThrThr-424
 431-LeuProAsnGlyMetLysProGluTyrArgPro-441

Hydrophilic Regions - Hopp-Woods

38-AsnGlyProAspArgProValGly-45
 90-AsnLeuLysAsnArgGlnGlyTrp-97
 144-ValLeuLysGlyAspAspArgArgThrAlaGln-154
 175-LeuArgSerGlyLysAlaLeuValArgIleArgGlnThrGlyLysAsnSerGlyThrIleAspAsnThrGly-198
 215-ThrAlaIleLysGlyArgPheGluGly-223
 239-AlaLeuAspGlyLysAla-244
 250-AlaGluAspProVal-254
 265-GlyArgLeuLysThrProSer-271
 279-TyrAlaAspLysAsnGluHis-285
 317-AsnProGlnArgLeuAlaGlu-323
 337-LeuAlaGlySerSerAsnAspGlyPro-345
 380-ValThrArgLysAlaLeuAsn-386
 393-AspThrGlySerAlaIle-398
 412-AspGluAlaGlyGluLeuAlaGlyLysGlnLysThr-423
 434-GlyMetLysProGluTyrArgPro-441

920-2**AMPHI Regions - AMPHI**

43-GlyGluPheProGluLeuGluProIleAla-52
 117-GlyIleLysGluMetProAsp-123
 135-LysAsnIleValAsnVal-140
 163-LeuAspAsnProAlaAsn-168
 190-ThrValThrAlaThrPheAspGlyPheAspThrSerAspArgSerLys-205
 212-GlnAlaPheSerAspSerThr-218

Antigenic Index - Jameson-Wolf

40-LeuGlyTyrGlyGluPheProGlu-47
 49-GluProIleAlaLysAspArgLeu-56
 66-ValThrGluLysGlyLysGluAsnMetIle-75
 77-ArgGlyThrTyrAsnTyrGlnTyrArgSerAsnArgProValLysAspGlySerTyr-95
 104-ThrPheTrpSerLysAsnLysAlaGlyTrp-113
 116-AlaGlyIleLysGluMetProAspAlaSerTyrCysGluGlnThrArgMetPheGlyLysAsnIleValAsnValGlyHisGluSerAlaAspThr-147
 152-LysProValGlyGlnAsnLeuGlu-159
 162-ProLeuAspAsnProAla-167
 173-GluArgPheLysVal-177
 181-PheArgGlyGluProLeuProAsnAla-189
 194-ThrPheAspGlyPheAspThrSerAspArgSerLysThrHisLysThrGluAla-211
 213-AlaPheSerAspSerThrAspAspLysGlyGluValAsp-225
 237-AsnValGluHisLysThrAspPheProAspGlnSerValCysGlnLysGlnAlaAsnTyrSer-257

Hydrophilic Regions - Hopp-Woods

49-GluProIleAlaLysAspArgLeu-56
 66-ValThrGluLysGlyLysGluAsnMetIle-75
 85-ArgSerAsnArgProValLysAspGlySer-94
 107-SerLysAsnLysAlaGlyTrp-113
 116-AlaGlyIleLysGluMetProAsp-123
 128-GluGlnThrArgMetPheGly-134
 142-HisGluSerAlaAsp-146
 173-GluArgPheLysVal-177

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196-AspGlyPheAspThrSerAspArgSerLysThrHisLysThrGluAla-211
 213-AlaPheSerAspSerThrAspAspLysGlyGluValAsp-225
 237-AsnValGluHisLysThrAspPheProAsp-246
 248-SerValCysGlnLys-252

921**AMPHI Regions - AMPHI**

12-AlaValLeuSerGlyCysGlnSerIleTyrValProThrLeuThrGluIleProValAsn-31
 33-IleAsnThrValLysThr-38
 51-HisTrpThrAspValAlaLysIleSerAspGlu-61
 72-GlyLysMetThrLysValGlnAlaAlaGlnTyrLeuAsnAsnPheArgLys-88
 98-AspSerMetTyrGluIleTyrLeuArg-106
 126-GlnAsnAlaLeuArgGlyTrpGlnGlnArg-135

Antigenic Index - Jameson-Wolf

36-ValLysThrGluAlaProAlaLysGlyPheArg-46
 56-AlaLysIleSerAspGluAlaThrArg-64
 72-GlyLysMetThrLys-76
 84-AsnAsnPheArgLysArgLeuValGlyArgAsnAlaValAspAspSerMet-100
 108-AlaIleAspSerGlnArgGlyAlaIleAsnThrGluGlnSerLys-122
 128-AlaLeuArgGlyTrpGlnGlnArgTrpLysAsnMetAspValLysProAsnAsnProAla-147

Hydrophilic Regions - Hopp-Woods

36-ValLysThrGluAlaProAlaLysGlyPheArg-46
 56-AlaLysIleSerAspGluAlaThrArg-64
 86-PheArgLysArgLeuValGly-92
 94-AsnAlaValAspAspSerMet-100
 108-AlaIleAspSerGlnArgGlyAlaIleAsnThrGluGlnSerLys-122
 136-TrpLysAsnMetAspValLysProAsnAsn-145

922**AMPHI Regions - AMPHI**

16-LeuSerAlaCysThr-20
 28-ArgAlaAsnGluAlaGlnAlaPro-35

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37-AlaValGluMetLysLys-42
 72-ValArgArgPheValAspAsp-78
 89-GluTrpGlnAspPhePheAspLys-96
 104-ValLysIleMetHis-108
 144-AspAspValAlaGln-148
 172-GlySerPheArgValAlaAspAlaLeu-180
 196-LysGluLeuValGluLeuLysLeuAla-205
 222-AlaMetGlyMetPro-226
 245-HisArgAspIleTrpGlyAsnValGlyAspValAlaAlaSerValAlaAsnTyrMetLysGlnHis-266
 298-ArgThrValAlaAspLeuLysAlaTyr-306
 335-TyrLeuGlyLeuAsnAsnPheTyrThr-343

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Antigenic Index - Jameson-Wolf

1-MetLysLysArgLysIleLeu-7
 22-MetGluAlaArgProProArgAlaAsnGluAlaGlnAlaProArgAlaValGluMetLysLysGluSerArgProAlaPhe-48
 61-ValSerAspSerGlyPhe-66

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70-AlaAsnValArgArgPheValAspAspGluValGlyLysGlyAspPheSerArgAlaGluTrp-90

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107-MetHisArgProSerThrSerArgPro-115

120-ArgThrGlyAsnSerGlyLysAlaLysPheArgGlyAlaArgArgPheTyrAlaGluAsnArgAlaLeuIle-143

145-AspValAlaGlnLysTyrGlyVal-152

163-IleGluThrAsnTyrGlyLysAsnThrGlySer-173

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186-AspTyrProArgArgAlaGlyPhePhe-194

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203-LysLeuAlaLysGluGluGlyGlyAsp-211

229-MetProSerSerTyrArgLysTrpAlaValAspTyrAspGlyAspGlyHisArgAspIle-248

266-HisGlyTrpArgThrGlyGlyLysMet-274

"

281-AlaProGlyAlaAsp-285

290-IleGlyGluLysThrAlaLeu-296

"

"

310-ProGlyGluGluLeuAlaAspAspGluLysAlaVal-321

326-GluThrAlaProGly-330

357-ValArgAspIleAlaAsnSerLeuGlyGlyProGlyLeu-369

Hydrophilic Regions - Hopp-Woods

1-MetLysLysArgLysIleLeu-7

22-MetGluAlaArgProProArgAlaAsnGluAlaGlnAlaProArgAlaValGluMetLysLysGluSerArgProAlaPhe-48

70-AlaAsnValArgArgPheValAspAspGluValGlyLysGlyAspPheSerArgAlaGluTrp-90

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122-GlyAsnSerGlyLysAlaLysPheArgGlyAlaArgArgPheTyrAlaGluAsnArgAlaLeuIle-143

166-AsnTyrGlyLysAsnThrGly-172

187-TyrProArgArgAlaGlyPhePhe-194

203-LysLeuAlaLysGluGluGlyGlyAsp-211

240-TyrAspGlyAspGlyHisArgAspIle-248

290-IleGlyGluLysThrAlaLeu-296

"

"

310-ProGlyGluGluLeuAlaAspAspGluLysAlaVal-321

357-ValArgAspIleAla-361

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AMPHI Regions - AMPHI

9-LeuMetAlaCysAlaAlaPheLeu-16

26-LeuGlyAlaCysTyrAlaIleLeuSerLeuTyrAla-37

63-ProAlaLeuLeuGlyGlyTrpValGlyAlaTyr-73

117-GlyValAlaSerProCysArgThrIleCysThrValCysGlyPheValAlaLeu-134

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Antigenic Index - Jameson-Wolf

43-IleAspLysArgCysAlaIleArgGlyGlnArgArgIleProGluHisArgLeu-60
 79-PheLysHisLysThrAlaLysLysArgPhe-88

Hydrophilic Regions - Hopp-Woods

43-IleAspLysArgCysAlaIleArgGlyGlnArgArgIleProGluHisArgLeu-60
 79-PheLysHisLysThrAlaLysLysArgPhe-88

925-1**AMPHI Regions** - AMPHI

8-ValGlyValValAlaValLeu-14
 116-LysCysGlyGlnThrAlaGlnAlaTyrArgAspAla-127
 139-GlnHisLeuAlaAlaIleGluGlnLeuLys-148
 155-PheAspGluLeuGlu-159

Antigenic Index - Jameson-Wolf

15-AlaGlyCysGlyLysAspAlaGlyGlyTyrGluGlyTyrTrpArgGluLysSerAspLysLysGluGlyMetI
 leAlaValLysLysGluLysGlyAsn-47
 57-ThrGlyLysGluGluSerLeuLeuLeuSerGluLysAspGlyAla-71
 75-AsnThrGlyIleGly-79
 81-IleProIleLysLeuSerAspAspGlyLysGluLeuTyrValGluArgArgGlnTyrValLysThrAspAlaA
 laMetLysAspLysIleIleAlaHisGlnLysLysCysGlyGlnThr-120
 123-AlaTyrArgAspAlaArgAsnAlaLeuProSerAsnGlnThrTyr-137
 145-GluGlnLeuLysArgArgPheGluAlaGluPheAspGluLeuGluLysGluIleLysCysAsnGlyArgSer
 ProAla-170

Hydrophilic Regions - Hopp-Woods

17-CysGlyLysAspAlaGlyGly-23
 27-TyrTrpArgGluLysSerAspLysLysGluGlyMetIleAlaValLysLysGluLysGly-46
 57-ThrGlyLysGluGluSerLeuLeuLeuSerGluLysAspGlyAla-71
 81-IleProIleLysLeuSerAspAspGlyLysGluLeuTyrValGluArgArgGlnTyrValLysThrAspAlaA
 laMetLysAspLysIleIleAlaHisGlnLysLysCysGlyGln-119
 123-AlaTyrArgAspAlaArgAsnAlaLeu-131
 145-GluGlnLeuLysArgArgPheGluAlaGluPheAspGluLeuGluLysGluIleLysCysAsnGlyArgSer
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926**AMPHI Regions** - AMPHI

29-ProSerGluHisIleSerSerPhe-36
 72-LeuGlySerThrLeuGlyGln-78
 98-AlaGluSerAlaGluGluLeuSerArgGln-107
 128-AlaGlyAlaProTyrArgIleLeuProAspGlyIle-139
 151-AlaAspSerGlyGlyGlnVal-157

Antigenic Index - Jameson-Wolf

19-LeuProGlnAsnAsnGluAsnLeuTrpGlnProSerGluHisIleSer-34
 37-AlaAlaGluGlyArgLeuAlaValLysAlaGluGlyLysGlySerTyrAla-53
 70-ThrProLeuGlySer-74
 79-LeuCysGlnAspArgAspGlyAlaLeu-87
 89-ValAspGlyLysGlyAsnValTyr-96
 99-GluSerAlaGluGluLeuSerArg-106
 121-TrpAlaAspGlyArgArgValAla-128
 134-IleLeuProAspGlyIleLeu-140
 148-GlyArgThrAlaAspSerGlyGlyGln-156
 177-GlyMetProSerGluThrGluThrProGluArgCysAlaAlaArgThrArg-193

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Hydrophilic Regions - Hopp-Woods

37-AlaAlaGluGlyArgLeuAlaValLysAlaGluGlyLysGlySer-51
 80-CysGlnAspArgAspGlyAlaLeu-87
 89-ValAspGlyLysGly-93
 99-GluSerAlaGluGluLeuSerArg-106
 123-AspGlyArgArgValAla-128
 149-ArgThrAlaAspSerGlyGlyGln-156
 180-SerGluThrGluThrProGluArgCysAlaAlaArgThrArg-193

927-2**AMPHI Regions - AMPHI**

13-LeuLeuThrAlaCys-17
 48-SerTyrAspValAlaArgAspPheTyrLysGlu-58
 120-LysGlyTrpGlnGlnAlaLeuPro-127
 145-AsnProLysGlnIleArgAspTrpAsnAspLeuAlaLysAspGly-159
 197-LysLeuValAlaSerIleLeu-203
 223-ArgAsnIleGlyAspValLeu-229
 275-ThrGlnLysThrAlaArgAla-281
 283-LeuGluTyrLeuTrpSerGluProAlaGlnGluLeu-294
 325-LysLysPheGlyGlyTrpAspAsnIleMetLysThr-336

Antigenic Index - Jameson-Wolf

18-SerProAlaAlaAspSerAsnHisProSerGlyGlnAsnAlaProAlaAsnThrGluSerAspGlyLysAsnIleThr-43
 48-SerTyrAspValAlaArgAspPheTyrLysGluTyrAsnPro-61
 67-TyrGlnSerGluHisProGlyThrSer-75
 79-GlnGlnSerHisGlyGlySerSerLysGlnAla-89
 104-AsnGlnSerSerAspIleAspLeuLeuGluLysLysGlyLeuVal-118
 125-AlaLeuProAspHisAlaAlaProTyrThr-134
 142-ArgLysAsnAsnProLysGlnIleArgAspTrpAsnAspLeuAlaLysAspGlyVal-160
 166-AsnProLysThrSerGlyAsnGlyArg-174
 185-LeuLysThrThrAsnGlyAsnGluGlnGluAlaGlnLys-197
 203-LeuLysAsnThrProValPheGluAsnGlyGlyArgAlaAlaThr-217
 220-PheThrGlnArgAsnIleGlyAsp-227
 238-TyrValSerLysLysLeuThrGlnGlyGln-247
 270-ValAlaLysLysGlyThrGlnLysThrAlaArgAla-281
 300-LeuArgProArgAsnProGluValLeuAlaArgHisLysAlaAspPheProAspLeuAspThrPheSerProGluLysLysPheGlyGlyTrp-330
 337-TyrPheAlaAspGlyGlyIle-343
 347-LeuThrAlaGlnLys-351

Hydrophilic Regions - Hopp-Woods

19-ProAlaAlaAspSerAsnHisProSer-27
 33-AlaAsnThrGluSerAspGlyLysAsn-41
 50-AspValAlaArgAspPheTyrLys-57
 67-TyrGlnSerGluHisProGly-73
 82-HisGlyGlySerSerLysGlnAla-89
 105-GlnSerSerAspIleAspLeuLeuGluLysLysGlyLeuVal-118
 142-ArgLysAsnAsnProLysGlnIleArgAspTrpAsnAspLeuAlaLysAspGlyVal-160
 167-ProLysThrSerGlyAsnGly-173
 187-ThrThrAsnGlyAsnGluGlnGluAlaGlnLys-197
 211-AsnGlyGlyArgAlaAla-216
 238-TyrValSerLysLysLeuThr-244
 270-ValAlaLysLysGlyThrGlnLysThrAlaArgAla-281
 300-LeuArgProArgAsnProGluValLeuAlaArgHisLysAlaAspPheProAsp-317
 319-AspThrPheSerProGluLysLysPheGlyGly-329

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347-LeuThrAlaGlnLys-351

929-2**AMPHI Regions - AMPHI**

25-ValProAspGlyValLys-30

34-TrpThrLeuLeuAlaMetPheValGlyValIleAlaAlaIleIle-48

76-GlyAlaAlaMetSerAspAlaLeuSerAlaPhe-86

155-HisProIleMetGlnSerIleAlaGlySerTyrGlySerAsnProAlaLys-171

180-TyrLeuAlaLeuVal-184

204-ProLeuIleValAsnLeuIleAlaGluAsnLeuGly-215

233-GlyValIleAlaPhePhe-238

265-ArgLeuArgGluMetGlyLysMetSer-273

280-AlaValIlePheGlyIle-285

355-LeuGlyLeuIleLysTrpPheSerGlyValLeuAlaGluSerValGlyGlyLeu-372

398-ThrAlaHisIleThrAlaMetPheGlyAlaPhePheAla-410

452-TyrThrThrMetGlyGluTrpTrp-459

Antigenic Index - Jameson-Wolf

25-ValProAspGlyValLysProGln-32

71-ThrAlaAspLysProGlyAlaAlaMet-79

122-GlyArgLysThrLeuGlyIle-128

143-ThrProSerAsnThrAlaArgGlyGlyGly-152

163-GlySerTyrGlySerAsnProAlaLysGlyThrGluGlyLysMetGlyLys-179

187-HisSerAsnProIleSer-192

213-AsnLeuGlySerSerPhe-218

248-TyrProProGluIleLysGluThrProAsn-257

261-PheAlaLysAspArgLeuArgGluMetGlyLysMetSerAlaAspGluIle-277

328-AspValLeuLysGluLysSerAlaTrp-336

Hydrophilic Regions - Hopp-Woods

71-ThrAlaAspLysProGlyAlaAlaMet-79

146-AsnThrAlaArgGly-150

168-AsnProAlaLysGlyThrGluGlyLysMetGlyLys-179

250-ProGluIleLysGluThrProAsn-257

261-PheAlaLysAspArgLeuArgGluMetGlyLysMetSerAlaAspGluIle-277

328-AspValLeuLysGluLysSerAlaTrp-336

930-1**AMPHI Regions - AMPHI**

8-LeuProAsnIleArg-12

69-AsnThrGlyGluThrValAsnGlnLeuMetGly-79

121-LeuHisAlaGlyAsnIleAsnGlnIleMetSerLeu-132

147-IleLeuAlaAlaPro-151

165-ProSerTyrLeuArgSerIleArgIle-173

199-AspLeuLeuAsnLeuArgAsp-205

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"

207-GluGlnGlyLeuGluAsnLeuLysArgLeuProThr-218

280-SerAspMetPheTyr-284

288-GlyArgSerIleGlyGlyThrProAsp-296

333-ArgTyrHisGlnAlaValSerGlyLeuSerGluValTyrAsp-346

400-TrpLeuAlaGluLeu-404

427-MetLysAspAlaLeuArgAlaProGluGluAlaPheGlyGluGly-441

472-HisAlaGlnTrpAsnLys-477

Antigenic Index - Jameson-Wolf

-342-

32-SerProAsnProAlaGluIleArgMetGlnGlnAspIleGlnGlnArgGlnArgGluGluGlnLeuArgGlnT
hrMetGlnProGluSerAspValArgLeuHisGlnLysAsnThrGlyGluThr-73
77-LeuMetGlyAspAspSerSerGln-84
93-ValLeuGluGlyGluHisHisAla-100
108-ArgAlaLeuArgGluThrGly-114
118-GlyLysCysLeuHisAlaGlyAsn-125
151-ProGlnAspLeuAsnSerGlyLysLeu-159
171-IleArgIleAspArgSerAsnAspAspGlnThrHis-182
191-AsnLysPheProThrArgSerAsnAspLeuLeuAsn-202

204-ArgAspLeuGluGlnGlyLeuGluAsnLeuLysArgLeuProThrAlaGluAlaAspLeu-223
228-ValGluGlyGluProAsnGlnSerAspVal-237
242-ArgGlnArgLeuLeuPro-247
252-ValGlyMetAspAsnSerGlySerGluAlaThrGlyLysTyrGlnGly-267
273-AlaAspAsnProLeuGlyLeu-279
287-TyrGlyArgSerIleGlyGlyThrProAspGluGluSerPheAspGlyHisArgLysGluGlyGlySerAsn
-310
329-HisAsnGlyTyrArg-333
343-GluValTyrAspTyrAsnGlyLysSerTyrAsnThrAspPheGlyPhe-358
362-LeuTyrArgAspAlaLysArgLysThr-370
377-TrpMetArgGluThrLysSerTyrIleAspAspAlaGluLeuThrValGlnArgArgLysThrAla-398
408-GluTyrIleGlyArgSerThrAlaAspPheLysLeuLysTyrLysArgGlyThrGlyMetLysAspAlaLeu
ArgAlaProGluGluAlaPheGlyGluGlyThrSerArg-444
451-SerAlaAspValAsnThrPro-457
474-GlnTrpAsnLysThrProLeuThrSerGlnAspLysLeuAla-487
492-HisThrValArgGlyPheAspGlyGluMet-501

503-LeuSerAlaGluArgGlyTrpTyrTrpArgAsnAspLeuSerTrpGlnPheLysProGlyHis-523
535-SerGlyGlnSerAlaLys-540
572-ArgAlaLeuLysLysProGluPhePheGlnSerArgLysTrpAlaSerGly-588

Hydrophilic Regions - Hopp-Woods

34-AsnProAlaGluIleArgMetGlnGlnAspIleGlnGlnArgGlnArgGluGluGlnLeuArgGln-55

57-MetGlnProGluSerAspValArgLeuHisGlnLysAsnThrGlyGluThr-73
78-MetGlyAspAspSerSerGln-84
93-ValLeuGluGlyGluHisHisAla-100
108-ArgAlaLeuArgGluThrGly-114
152-GlnAspLeuAsnSerGlyLys-158
171-IleArgIleAspArgSerAsnAspAspGlnThrHis-182
193-PheProThrArgSerAsnAsp-199

204-ArgAspLeuGluGlnGlyLeuGluAsnLeuLysArgLeuProThrAlaGluAlaAspLeu-223
228-ValGluGlyGluProAsnGlnSer-235
254-MetAspAsnSerGlySerGluAlaThrGly-263

291-IleGlyGlyThrProAspGluGluSerPheAspGlyHisArgLysGluGlyGlySer-309
345-TyrAspTyrAsnGly-349

362-LeuTyrArgAspAlaLysArgLysThr-370
377-TrpMetArgGluThrLysSerTyrIleAspAspAlaGluLeuThrValGlnArgArgLysThr-397
413-SerThrAlaAspPheLysLeuLysTyrLysArgGlyThrGlyMetLysAspAlaLeuArgAlaProGluGlu
AlaPheGly-439

479-ProLeuThrSerGlnAspLysLeuAla-487

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495-ArgGlyPheAspGlyGluMet-501

503-LeuSerAlaGluArg-507

572-ArgAlaLeuLysLysProGluPhePheGln-581

931-2**AMPHI Regions - AMPHI**

43-LysAlaProLysThrValAlaAsnPheValArgTyrAlaArgLys-57

65-PheHisArgValIleAspGly-71

81-GluAspLeuAlaGlnLysAlaSerAspLys-90

94-AsnGluSerGlyAsnGlyLeuLysAsnThr-103

142-ThrValPheGlyArgValGluSerGlyMetAsnThrValSerLysIleAlaArgValLysThrAlaThrArg
GlyPhe-167**Antigenic Index - Jameson-Wolf**

1-MetLysProLysPhe-5

30-ThrAspMetGlyAsn-34

38-ValLeuAspGluSerLysAlaProLysThr-47

53-ArgTyrAlaArgLysGlyPheTyrAspAspThrValPhe-65

76-GlyGlyGlyLeuThrGluAspLeuAlaGlnLysAlaSerAspLysAlaValAlaAsnGluSerGlyAsnGlyL
euLysAsnThrAla-104

110-AlaArgThrThrAlaProAspSerAlaThr-119

128-AspAsnAlaSerLeuAspTyrLysAsnGlyGlnTyr-139

145-GlyArgValGluSerGlyMetAsnThrVal-154

156-LysIleAlaArgValLysThrAlaThrArgGlyPhe-167

176-ValLysIleArgArg-180

Hydrophilic Regions - Hopp-Woods

1-MetLysProLysPhe-5

30-ThrAspMetGlyAsn-34

38-ValLeuAspGluSerLysAlaProLysThr-47

78-GlyLeuThrGluAspLeuAlaGlnLysAlaSerAspLysAlaValAlaAsnGluSerGlyAsnGlyLeuLysA
snThrAla-104

113-ThrAlaProAspSerAlaThr-119

130-AlaSerLeuAspTyrLysAsn-136

145-GlyArgValGluSerGlyMet-151

156-LysIleAlaArgValLysThrAlaThr-164

176-ValLysIleArgArg-180

932**AMPHI Regions - AMPHI**

27-AspAlaAlaSerPheTrpGluLeuLysAsn-36

38-AlaAsnProTyrPro-42

46-SerAlaAlaLeuAspGlnTyrProSer-54

60-GlnLeuLysAspMetGlnGluCys-67

Antigenic Index - Jameson-Wolf

18-PheGlyGlyPheLysProAsnProTrpAsp-27

34-LeuLysAsnTyrAlaAsnProTyrProGlySer-44

50-AspGlnTyrProSerLysAlaArgArgGlnLeuLysAspMetGlnGluCysGlyTyrAspProIleAspG
lyGlyLysSerGluAlaAspAlaCysLeuArgLysLysGlyTrpCysArgLysGlyPheAspProTyrProGluAs
nLysLysTyrGluTrpProArgGluGluGlyLysThrLys-112**Hydrophilic Regions - Hopp-Woods**52-TyrProSerLysAlaArgArgGlnLeuLysAspMetGlnGluCysGlyTyrAspProIleAspGlyGlyL
ysSerGluAlaAspAlaCysLeuArgLysLysGlyTrpCys-89

91-LysGlyPheAspProTyrProGluAsnLysLysTyrGluTrpProArgGluGluGlyLysThrLys-112

933**AMPHI Regions - AMPHI**

6-LysThrSerGluTyr-10
 37-GlnPheGluAsnIleAsnAsnSerLysLys-46
 61-GlyPheAlaArgGlyLeu-66
 75-ThrGluGluGlnIleArgLysTyrPheLysGluCysPheAsn-88
 94-ArgAspTyrSerThrCysGlnAla-101
 133-SerValGlyAsnTyrThrGluTrpAlaAsnGlnValIleHisHisIleGluAsnTyrValSerPheAlaAla
 HisLeuTyrSerGlyLeuAspProPheHisTyrIleGluVal-170
 261-GluAsnProIleAspAspLeuLysSerLeuAspGlyHisGlnIleIleLysValAsn-279
 308-GlyPhePheThrLys-312
 355-TrpLeuArgValIleAspGlyHisSerAsn-364
 373-ProValGluGlyTyrArgLysGly-380
 430-AlaGlyValTyrAlaThrTrpHis-437
 451-TrpMetGlnTyrGln-455
 466-GlyThrGluArgPheThr-471
 473-LysGlyIleThrAlaSer-478
 482-GlyTyrAsnAlaLeuLeuAla-488
 547-LeuTyrLysAsnIleAlaIleGlu-554
 556-PheAlaAlaValAsn-560
 605-PheAsnArgGlnThrGly-610

Antigenic Index - Jameson-Wolf

1-LysLysLeuArgAspLysThrSerGluTyrTrpLysLysGluThr-15
 19-ThrGluAspAsnProLysValProPro-27
 32-TyrProArgThrTyrGln-37
 39-GluAsnIleAsnAsnSerLysLysIleSer-48
 50-TyrAspGlnGluTyrThrGluGlyTyr-58
 67-GlyValAlaLysArgAsnGlyAspThrGluGluGlnIleArgLysTyrPheLys-84
 86-CysPheAsnSerAsnThrLysIleArgAspTyrSerThrCysGlnAlaGluLysPheGlySerHisPro-108
 118-LeuGlyProLysIleLysAsnSerHisIleAsnSerGluIle-131
 159-TyrSerGlyLeuAspPro-164
 169-GluValThrAspAsnSerHis-175
 184-AspGluPheArgLeuGluAsnSerLeuTrpGluProArgTrpAspSerAsnValGlyLysLeuLysThrThr
 AsnAlaAspIleArgPheAsnThrLysSerGluSerLeuLeuValLysGluAspTyrAlaGlyGlyAlaArgPheA
 rgPheAlaTyrAspProLysGluAlaLysAsn-243
 249-GluLysAsnValThrGlyThrSer-256
 259-IlePheGluAsnProIleAspAspLeuLysSerLeuAspGlyHisGlnIleIle-276
 278-ValAsnGlyThrAlaAspLysHisAlaPheArgLeuSerGlyLysHisGlnLysGly-296
 302-LeuGlnGlnArgProGluGlyPhe-309
 312-LysValGlnGluArgAspAspMet-319
 336-ArgLeuAsnAsnLysAsnSerAspIlePheAspArgThrLeuProArgLysGlyLeu-354
 359-IleAspGlyHisSerAsnGlnTrpValGlnGlyLysThrAlaProValGluGlyTyrArgLysGlyVal-38
 1
 391-GlnAsnGluSerAsnGlnLeu-397
 402-MetGlyGlyGlnAlaGluGlnArgSerThrPheHisAsnProAspThrAspAsnLeuThr-421
 423-GlyAsnValLysGly-427
 439-LeuGlnAspLysGlnThrGlyAlaTyrAlaAspSer-450
 455-GlnArgPheArgHisArgIleAsnThrGluAspGlyThrGluArgPheThrSerLysGlyIleThrAla-47
 7
 490-HisPheThrLysLysGlyAsnSerLeu-498
 513-ValAsnGlyLysPheSerAspSerGluAsnAla-523
 528-LeuGlySerArgGlnLeuGlnThr-535
 566-LysProPheGlyValGluMetAspGlyGluArgArgValIleAsnAsnLysThrAlaIleGluSer-587
 593-ValLysIleLysSer-597

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604-ThrPheAsnArgGlnThrGlyLysHisHisGlnAlaLysGlnGly-618

Hydrophilic Regions - Hopp-Woods

1-LysLysLeuArgAspLysThrSerGluTyrTrpLysLysGluThr-15
 20-GluAspAsnProLys-24
 42-AsnAsnSerLysLysIleSer-48
 67-GlyValAlaLysArgAsnGlyAspThrGluGluGlnIleArgLysTyrPheLys-84
 91-ThrLysIleArgAspTyrSer-97
 100-GlnAlaGluLysPheGly-105
 120-ProLysIleLysAsn-124
 184-AspGluPheArgLeuGlu-189
 195-ProArgTrpAspSerAsnValGlyLysLeuLysThrThrAsnAlaAspIleArgPheAsnThrLysSerGlu
 SerLeuLeuValLysGluAspTyrAlaGly-228
 236-TyrAspProLysGluAlaLysAsn-243
 250-LysAsnValThrGly-254
 262-AsnProIleAspAspLeuLysSerLeuAsp-271
 280-GlyThrAlaAspLysHisAlaPhe-287
 289-LeuSerGlyLysHisGlnLys-295
 303-GlnGlnArgProGluGlyPhe-309
 313-ValGlnGluArgAspAspMet-319
 337-LeuAsnAsnLysAsnSerAspIlePheAsp-346
 375-GluGlyTyrArgLysGlyVal-381
 392-AsnGluSerAsnGln-396
 405-GlnAlaGluGlnArgSerThrPheHis-413
 415-ProAspThrAspAsnLeuThr-421
 439-LeuGlnAspLysGlnThr-444
 455-GlnArgPheArgHisArgIleAsnThrGluAspGlyThrGluArgPheThrSer-472
 490-HisPheThrLysLysGlyAsnSer-497
 516-LysPheSerAspSerGluAsnAla-523
 568-PheGlyValGluMetAspGlyGluArgArgValIleAsn-580
 593-ValLysIleLysSer-597
 607-ArgGlnThrGlyLysHisHisGlnAlaLysGlnGly-618

935**AMPHI Regions - AMPHI**

41-ValSerAspLysTrpAla-46
 56-AlaProArgValVal-60
 72-LeuGluHisSerLeuArgAsp-78
 87-LeuIleAlaSerLeuAlaAspLeuTyrAlaLysLeu-98
 111-AlaLeuLeuAlaLysLeuAlaGlyArgProAlaGluAlaValAlaArgTyrArgGlu-129
 158-GluArgHisPheAlaGlu-163
 172-ProValLeuGluAsnValGlyArgPheArgLysLysThrGlu-185
 375-LysArgLeuGlyGluSerAlaThrValPheGlyGlyTrpGlnPheVal-390
 415-AlaGlyTrpAlaGlnGluTrpArgGlnLeuGlyGlyLeu-427
 435-TyrAlaArgArgAsnTyrLysGlyIleAlaAlaPhe-446

Antigenic Index - Jameson-Wolf

27-AlaIleLeuAspAspLysAlaLeu-34
 39-ArgSerValSerAspLysTrpAlaGluSerAspTrpLysValGluAsnAspAlaProArgValValAspGlyA
 spPhe-64
 70-LysMetLeuGluHisSerLeuArgAspAlaLeuAsnGlyAsnGln-84
 97-LysLeuProAspTyrAspAla-103
 108-ArgAlaArgAlaLeu-112
 116-LeuAlaGlyArgProAlaGluAlaValAlaArgTyrArgGluLeuHisGlyGluAsnAlaAlaAspGluArg
 IleLeu-141

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145-AlaAlaAlaGluPheAspAspPheArgLeuLysSerAlaGluArgHisPheAlaGluAlaAlaLysLeuAsp
Leu-169

176-AsnValGlyArgPheArgLysLysThrGluGly-186

192-PheSerGlyGlyIle-196

199-AlaValAsnArgAsnAlaAsnAsnAlaAla-208

210-GlnTyrCysArgGlnAsnGlyGlyArgGln-219

224-SerArgAlaGluArgAlaAla-230

236-IleGluAlaGluLysLeuThrProLeuAlaAsp-246

253-ArgSerAsnIleGlyGlyThrSerTyr-261

263-PheSerLysLysSerAlaTyrAspAspGlyPheGlyArg-275

279-GlyTrpGlnTyrLysAsnAlaArgGlnThr-288

300-SerGlySerAspGlyPheAspAlaLysThrLysArgValAsnAsnArgArgLeuProProTyr-320

332-HisThrTyrArgProAsnProGlyTrp-340

347-GluHisTyrArgGlnArgTyrArgGluGlnAspArgAlaGluTyrAsnAsnGlyArgGlnAspGlyPheTyr
-370

373-SerAlaLysArgLeuGlyGlu-379

392-PheValProLysArgGluThrVal-399

406-AlaAlaTyrArgArgAsnGlyValTyrAlaGly-416

425-GlyGlyLeuAsnSerArgValSerAlaSerTyrAlaArgArgAsnTyrLysGly-442

448-ThrGluAlaGlnArgAsnArgGluTrpAsn-457

463-SerHisAspLysLeuSerTyrLysGly-471

480-PheGlyArgThrGluSerAsnValProTyrAlaLysArgArgAsnSerGlu-496

501-AlaAspTrpArgPhe-505

Hydrophilic Regions - Hopp-Woods

27-AlaIleLeuAspAspLysAlaLeu-34

39-ArgSerValSerAspLysTrpAlaGluSerAspTrpLysValGluAsnAspAlaProArgValValAsp-61

70-LysMetLeuGluHisSerLeuArgAspAlaLeuAsn-81

108-ArgAlaArgAlaLeu-112

116-LeuAlaGlyArgProAlaGluAlaValAlaArgTyrArgGluLeuHisGly-132

134-AsnAlaAlaAspGluArgIleLeu-141

145-AlaAlaAlaGluPheAspAspPheArgLeuLysSerAlaGluArgHisPheAlaGluAlaAlaLysLeuAsp
Leu-169

176-AsnValGlyArgPheArgLysLysThrGluGly-186

200-ValAsnArgAsnAlaAsn-205

212-CysArgGlnAsnGlyGlyArgGln-219

224-SerArgAlaGluArgAlaAla-230

236-IleGluAlaGluLysLeuThrPro-243

265-LysLysSerAlaTyrAspAspGlyPheGly-274

283-LysAsnAlaArgGlnThr-288

303-AspGlyPheAspAlaLysThrLysArgValAsnAsnArgArgLeuPro-318

348-HisTyrArgGlnArgTyrArgGluGlnAspArgAlaGluTyrAsnAsnGlyArgGlnAsp-367

373-SerAlaLysArgLeuGlyGlu-379

393-ValProLysArgGluThrVal-399

407-AlaTyrArgArgAsnGly-412

435-TyrAlaArgArgAsnTyrLys-441

449-GluAlaGlnArgAsnArgGluTrp-456

463-SerHisAspLysLeuSerTyr-469

480-PheGlyArgThrGluSer-485

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489-TyrAlaLysArgArgAsnSerGlu-496

936-1**AMPHI Regions - AMPHI**

10-ThrLeuIleAlaAlaIle-15

22-GlyCysValSerAlaVal-27

100-GlnPheValGlyGlnIle-105

112-AlaGluGlyValTyrAsnTyrIleThrValAlaSerLeuProArgThrAlaGlyAspIleAlaGlyAsp-13

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Antigenic Index - Jameson-Wolf

1-MetLysProLysProHisThrVal-8

33-ValGlyAlaLysSerAlaValAspArgArgThrThrGlyAlaGlnThrAspAspAsnValMet-53

56-ArgIleGluThrThrAlaArgSerTyrLeuArgGlnAsnAsnGlnThrLysGlyTyr-74

94-AlaThrGluGlyGluLysGlnPhe-101

106-AlaArgSerGluGlnAlaAla-112

124-LeuProArgThrAlaGlyAspIleAlaGlyAspThrTrpAsnThrSerLysValArgAla-143

149-SerProAlaThrGlnAlaArgValLys-157

172-ThrProGluGluGlnAlaGlnIleThr-180

Hydrophilic Regions - Hopp-Woods

1-MetLysProLysProHisThr-7

37-SerAlaValAspArgArgThrThrGlyAlaGlnThrAspAspAsnValMet-53

56-ArgIleGluThrThrAla-61

68-AsnAsnGlnThrLysGlyTyr-74

94-AlaThrGluGlyGluLysGlnPhe-101

106-AlaArgSerGluGlnAlaAla-112

125-ProArgThrAlaGly-129

152-ThrGlnAlaArgValLys-157

172-ThrProGluGluGlnAlaGlnIle-179

937**AMPHI Regions - AMPHI**

6-LeuProAlaLeuProAlaIleLeuProLeuSerThr-17

190-AsnGlySerLysThrLeuSer-196

Antigenic Index - Jameson-Wolf

27-AspIleMetThrAspLysGlyLysTrpLysLeuGluThr-39

44-LeuAsnSerGluAsnAsnArgAlaGluLeu-53

72-GluIleGlnGluAsnGlySerAsnThrAsp-81

95-GlyAsnThrAspIleTyrGlySerGlySer-104

108-HisGluGluArgLysLeuAspGlyAsnSerLysThrArgAsnLysArgMetSerAsp-126

135-PheLeuLysAspAspLysAsnProAla-143

151-ThrValTyrGluLysSerArgAsnLysAlaSerSerGlyLysSer-165

187-TyrArgIleAsnGlySerLysThrLeuSerAspGlyIleArgTyrLysSerGlyAsnTyr-206

217-AlaAsnAspArgIleSerLeuThrGlyGly-226

231-GlyArgGlnProAspArgThrAspGlyLysArgGluSerSerArgAsnThrSerThr-249

273-ValSerGlyGlnSerSerSerGluLeuLysPhe-283

Hydrophilic Regions - Hopp-Woods

27-AspIleMetThrAspLysGlyLysTrpLysLeu-37

47-GluAsnAsnArgAlaGluLeu-53

72-GluIleGlnGluAsnGlySerAsnThr-80

108-HisGluGluArgLysLeuAspGlyAsnSerLysThrArgAsnLysArgMetSerAsp-126

135-PheLeuLysAspAspLysAsnPro-142

151-ThrValTyrGluLysSerArgAsnLysAlaSerSer-162

193-LysThrLeuSerAspGlyIleArgTyrLysSer-203

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217-AlaAsnAspArgIleSer-222
 232-ArgGlnProAspArgThrAspGlyLysArgGluSerSerArgAsnThr-247
 277-SerSerSerGluLeuLysPhe-283

939-2**AMPHI Regions - AMPHI**

32-AlaThrValCysAla-36
 90-AspGlnAspIleLeu-94
 121-LysIleTyrArgGly-125
 135-CysMetSerCysHisGly-140
 151-SerGluIleGlnAlaTyrProArgLeuGlyGly-161
 169-GluGlnMetAsnAlaTyrLys-175
 185-GluAspIleAlaAsnArgMetSer-192

Antigenic Index - Jameson-Wolf

18-AlaSerProLysAlaAspValGluLysGlyLysGlnVal-30
 40-AlaAlaAspGlyAsnSerGlyIle-47
 66-IleGlyIleArgAspGlyLysArgThrHisGlySerAlaAlaVal-80
 88-LeuSerAspGlnAspIle-93
 102-LysGlnGlnProLysSerGlyGluAlaAsnProLysGluAsnProGluLeuGly-119
 122-IleTyrArgGlyGlyLeuSerAspLysLysValPro-133
 139-HisGlyProSerGlyAlaGlyMetProGlyGlySerGluIleGlnAla-155
 157-ProArgLeuGlyGlyGlnHisGln-164
 172-AsnAlaTyrLysSerGlyGlnArgLysAsnThrIleMetGluAspIleAlaAsnArgMetSerGluGluAsp
 LeuLysAla-198

Hydrophilic Regions - Hopp-Woods

18-AlaSerProLysAlaAspValGluLysGlyLysGlnVal-30
 40-AlaAlaAspGlyAsnSer-45
 67-GlyIleArgAspGlyLysArgThrHisGly-76
 89-SerAspGlnAspIle-93
 103-GlnGlnProLysSerGlyGluAlaAsnProLysGluAsnProGluLeuGly-119
 126-GlyLeuSerAspLysLysValPro-133
 175-LysSerGlyGlnArgLysAsnThrIleMetGluAspIleAlaAsnArgMetSerGluGluAspLeuLysAla
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950**AMPHI Regions - AMPHI**

33-GlyValHisLysSerAlaHisGly-40
 71-AlaThrValLysLysThrHisLysHisThrLysAla-82

Antigenic Index - Jameson-Wolf

1-MetAsnLysAsnIle-5
 23-AlaAlaAsnLysProAlaSerAsnAlaThrGlyValHisLysSerAlaHisGlySerCysGlyAlaSerLysS
 erAlaGluGlySerCysGlyAlaAlaGlySerLysAlaGlyGluGlyLysCysGlyGluGlyLysCysGlyAlaTh
 rValLysLysThrHisLysHisThrLysAlaSerLysAlaLysAlaLysSerAlaGluGlyLysCysGlyGluGly
 LysCysGlySerLys-102

Hydrophilic Regions - Hopp-Woods

23-AlaAlaAsnLysProAlaSer-29
 33-GlyValHisLysSerAlaHis-39
 43-GlyAlaSerLysSerAlaGluGlySerCys-52
 55-AlaGlySerLysAlaGlyGluGlyLysCysGlyGluGlyLysCys-69
 71-AlaThrValLysLysThrHisLysHisThrLysAlaSerLysAlaLysAlaLysSerAlaGluGlyLysCysG
 lyGluGlyLysCysGlySerLys-102

951**AMPHI Regions - AMPHI**

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9-LysMetLeuThrValLeuThrAla-16
32-AspMetLysGlnProLysGluValGlyLysValPheArgLysGlnGlnArgTyr-49
64-ValGlyGluArgValAsn-69

129-TrpArgGlnIleGluProIleProGlyLys-138
157-HisLeuAspGlyLeuGluGluValLeuAla-166
191-AlaGlnLysAlaSerLysAlaValArgArg-200
206-GluHisLeuProGluAlaAla-212
230-GlyAlaLeuGlnArgLeuAlaLysLeu-238
256-LysTyrProGluIleLeuAspGlyPhePheGlu-266

280-MetGluIleMetAsnLeuValSerLeuHisArgLeuAspAspAla-294
327-ValIleAspGlyTyrAlaGluLys-334

336-TyrGlyArgGlyThrGlu-341
364-ValArgGlnTrpLeuLys-369
397-AlaLeuArgGlnIleGlyArgValArgLysLeuProGluGlnGln-411
418-AspAsnLeuSerLysIle-423

425-MetLeuAlaLeuSer-429
436-GluAlaLeuArgGlyLeuAspLysIleIleGluLys-447
479-SerAspLeuGluArgAlaPheArg-486
497-AsnLeuGlyTyrSer-501
565-HisLeuGlyGluVal-569
581-AspValTrpThrGlnAla-586
596-TrpArgGluThrLeu-600

Antigenic Index - Jameson-Wolf

25-AlaAlaGlyGlyGlyAlaGlyAspMetLysGlnProLysGluValGlyLysValPheArgLysGlnGlnArgTyrSerGluGluGluIleLysAsnGluArgAlaArgLeu-61

63-AlaValGlyGluArgValAsn-69
79-ThrAlaLeuGlnLysGlyGlnAla-86
98-GluArgThrLysSerProGluValAlaGluArgAlaLeuGlu-111
128-LysTrpArgGlnIleGluProIleProGlyLysAlaGlnLysArgAlaGlyTrpLeuArgAsnValLeuArgGluArgGlyAsnGlnHisLeuAspGlyLeuGluGluValLeuAlaGlnAlaAspGluGlyGlnAsnArgArg-175
185-ValGlnGlnAspGlyLeuAlaGlnLysAlaSerLysAlaValArgArgAlaAlaLeuLys-204
221-GlnGlyArgGluLysGluLysAlaIle-229
234-ArgLeuAlaLysLeuAspThrGluIleLeuPro-244
252-LeuThrAlaArgLysTyrProGluIleLeuAspGlyPhePheGluGlnThrAspThrGlnAsn-272
289-HisArgLeuAspAspAlaTyrAla-296
302-LeuGluArgAsnProAsnAlaAsp-309
319-AlaAsnArgLysGluGlyAlaSer-326
330-GlyTyrAlaGluLysAlaTyrGlyArgGlyThrGluGluGlnArgSerArgAla-347
355-TyrAlaAspArgArgAspTyrAlaLys-363
366-GlnTrpLeuLysLysValSerAla-373
377-LeuPheAspLysGlyVal-382
389-ValGluLeuAspGlyGlyArgAlaAlaLeu-398

400-GlnIleGlyArgValArgLysLeuProGluGlnGlnGlyArgTyrPheThr-416
430-LysLeuProAspLysArgGluAlaLeuArgGlyLeuAspLysIleIleGluLysProProAlaGlySerAsnThrGluLeuGlnAla-458
470-ArgLeuGlyLysArgLysLysMetIleSerAspLeuGluArgAlaPheArgLeuAlaProAspAsn-491
504-ThrAspSerLysArgLeuAspGluGlyPhe-513
522-IleAsnProAspAspThrAlaValAsnAspSerIle-533

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539-LeuLysGlyAspAlaGluSerAla-546
 551-ArgTyrSerPheGluAsnAspProGluProGluVal-562
 574-GlyGluArgAspGlnAla-579
 588-HisLeuThrGlyAspLysLysIleTrpArgGluThrLeuLysArgHisGlyIleAlaLeuProGlnProSer
 ArgLysProArgLys-616

Hydrophilic Regions - Hopp-Woods

29-GlyAlaGlyAspMetLysGlnProLysGluValGlyLysValPheArgLysGlnGlnArgTyrSerGluGluGluIleLysAsnGluArgAlaArgLeu-61

63-AlaValGlyGluArgValAsn-69
 79-ThrAlaLeuGlnLysGlyGlnAla-86
 98-GluArgThrLysSerProGluValAlaGluArgAlaLeuGlu-111
 135-IleProGlyLysAlaGlnLysArgAlaGlyTrp-145
 149-ValLeuArgGluArgGlyAsnGlnHis-157

159-AspGlyLeuGluGluValLeuAlaGlnAlaAspGluGlyGlnAsnArgArg-175
 189-GlyLeuAlaGlnLysAlaSerLysAlaValArgArgAlaAlaLeuLys-204
 221-GlnGlyArgGluLysGluLysAlaIle-229
 234-ArgLeuAlaLysLeuAspThrGluIle-242
 252-LeuThrAlaArgLysTyrProGluIle-260
 265-PheGluGlnThrAspThrGlnAsn-272
 289-HisArgLeuAspAspAlaTyrAla-296
 302-LeuGluArgAsnProAsn-307
 319-AlaAsnArgLysGluGlyAlaSer-326
 331-TyrAlaGluLysAlaTyrGlyArgGlyThrGluGluGlnArgSerArgAla-347
 355-TyrAlaAspArgArgAspTyrAlaLys-363
 389-ValGluLeuAspGlyGlyArgAlaAlaLeu-398

400-GlnIleGlyArgValArgLysLeuProGluGlnGlnGly-412
 430-LysLeuProAspLysArgGluAlaLeuArgGlyLeuAspLysIleIleGluLysProProAla-450
 452-SerAsnThrGluLeuGlnAla-458
 470-ArgLeuGlyLysArgLysLysMetIleSerAspLeuGluArgAlaPheArgLeuAlaProAspAsn-491
 504-ThrAspSerLysArgLeuAspGlu-511
 523-AsnProAspAspThrAlaVal-529
 541-GlyAspAlaGluSer-545
 554-PheGluAsnAspProGluProGluVal-562
 574-GlyGluArgAspGlnAla-579
 590-ThrGlyAspLysLysIleTrpArgGluThrLeuLysArgHisGly-604
 609-GlnProSerArgLysProArgLys-616

952**AMPHI Regions - AMPHI**

63-SerValAlaThrLeuLeuAsnAsnPheTyrGlyGln-74
 81-ValLeuLysLysLeuAsp-86
 94-PheGluAspMetArgArgIle-100
 116-GluGlnLeuAlaGlnLeu-121
 138-SerValLeuArgGlyIleAsp-144
 163-AlaGlnPheLeuAspAla-168
 179-LysIleLeuAlaVal-183

Antigenic Index - Jameson-Wolf

40-GlnSerTrpLysAlaArgArgAspPheAsnIleValLysGlnAspLeuAspPheSerCys-59

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70-AsnPheTyrGlyGlnThrLeuThrGluGluGluValLeuLysLysLeuAspLysGluGlnMetArgAlaSerP
heGluAspMetArgArgIleMetPro-102
104-LeuGlyPheGluAlaLysGlyTyr-111
129-LeuLysTyrArgLysAspAspHisPheSer-138
141-ArgGlyIleAspGlyAsnThr-147
169-TrpGlnThrArgGluGlyAsnLeuAla-177
184-IleProLysLysAlaGluThrIleSer-192
199-GlnHisProLysArgGlnThrGlu-206
213-ArgGlnAlaArgAlaGlu-218

Hydrophilic Regions - Hopp-Woods

41-SerTrpLysAlaArgArgAspPheAsnIleValLysGlnAspLeuAspPhe-57
76-LeuThrGluGluGluValLeuLysLysLeuAspLysGluGlnMetArgAlaSerPheGluAspMetArgArgI
leMetPro-102
104-LeuGlyPheGluAlaLysGly-110
130-LysTyrArgLysAspAspHisPheSer-138
169-TrpGlnThrArgGluGlyAsnLeu-176
184-IleProLysLysAlaGluThrIleSer-192
200-HisProLysArgGlnThrGlu-206
213-ArgGlnAlaArgAlaGlu-218

953**AMPHI Regions - AMPHI**

39-AsnThrSerThrAsnValGlyGlyPheTyrGlyLeuThr-51
75-GlnSerGlySerGlnHisPheThrAspHisLeuLysSerAlaAspIlePheAspAlaAlaGln-95
151-GlyAspPheSerThrThr-156

Antigenic Index - Jameson-Wolf

22-TyrLysValAspGluTyrHisAla-29
38-PheAsnThrSerThrAsnVal-44
54-ValGluPheAspGlnAlaLysArgAspGlyLysIleAspIle-67
83-AspHisLeuLysSer-87
95-GlnTyrProAspIleArgPheValSer-103
105-LysPheAsnPheAsnGlyLysLysLeuValSer-115
122-MetHisGlyLysThrAlaProValLysLeuLysAlaGluLys-135
137-AsnCysTyrGlnSerProMetGluLysThrGluValCysGlyGlyAsp-152
154-SerThrThrIleAspArgThrLysTrpGly-163
174-LysSerValArgIle-17
180-IleGlnIleGluAlaAlaLysGln-187

Hydrophilic Regions - Hopp-Woods

22-TyrLysValAspGluTyrHisAla-29
54-ValGluPheAspGlnAlaLysArgAspGlyLysIleAspIle-67
83-AspHisLeuLysSer-87
108-PheAsnGlyLysLysLeuValSer-115
125-LysThrAlaProValLysLeuLysAlaGluLys-135
142-ProMetGluLysThrGluValCysGly-150
155-ThrThrIleAspArgThrLysTrp-162
174-LysSerValArgIle-178
180-IleGlnIleGluAlaAlaLysGln-187

954**AMPHI Regions - AMPHI**

48-ArgAlaAlaArgPheArg-53
57-GlnGlyLeuGlyGlyAspPheGluArgPheLeuLysGly-69
74-GlnGluAsnLeuAlaLysTyrArgGluAsnIle-84
100-ProTyrArgValCysLysGlnAla-107

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134-TyrGlnAsnTyrArgLysSerMetGlnGluCysArgLysThrIleThr-149

Antigenic Index - Jameson-Wolf

17-GlyGlnGluGlnSerGlnLysAlaAspAlaGlu-27

35-TyrGlnPheAlaAspGluLysGln-42

58-GlyLeuGlyGlyAspPheGluArgPheLeuLysGlyGluIleProAsnGlnGluAsnLeuAlaLysTyrArgGluAsnIle-84

92-AlaAspThrAsnGlyAspAspAspProTyrArgValCysLys-105

107-AlaAlaGlnAspAlaGluIleLeuMet-115

119-ValThrSerGlyGlyGlyGlyThrThrAspLeuAspLysGluSerTyrGlnAsnTyrArgLysSerMetGlnGluCysArgLysThrIleThrGluAlaGluAlaAsnLeuProLysLys-158

Hydrophilic Regions - Hopp-Woods

17-GlyGlnGluGlnSerGlnLysAlaAspAlaGlu-27

36-GlnPheAlaAspGluLysGln-42

61-GlyAspPheGluArgPheLeuLys-68

70-GluIleProAsnGlnGluAsnLeuAlaLysTyrArgGluAsnIle-84

94-ThrAsnGlyAspAspAspProTyrArgValCysLys-105

107-AlaAlaGlnAspAlaGluIleLeuMet-115

125-GlyThrThrAspLeuAspLysGluSerTyrGlnAsnTyrArgLysSerMetGlnGluCysArgLysThrIleThrGluAlaGluAlaAsnLeuProLysLys-158

957**AMPHI Regions** - AMPHI

11-SerPhePheAlaLeuValPheAla-18

39-AlaThrGluValProLysAsnPro-46

48-AlaPheValAlaLysLeuAlaArgLeuPheArgAsnAla-60

76-AsnLeuAlaGlyThrValAspAsp-83

198-GluAspValTyrGluHisCysLeuGlyCysTyrGlnMet-210

218-TyrArgAspValAlaAsnAspGlu-225

235-SerAsnArgIleAlaSer-240

249-GlnAsnMetArgGluLeuMetProArg-257

335-GluLysGluValArgArgTyrAlaGluAlaAlaAlaArg-367

Antigenic Index - Jameson-Wolf

29-IleAsnProArgTrp-33

35-LeuSerAspThrAlaThrGluValProLysAsnProAsn-47

57-PheArgAsnAlaAspArgAla-63

69-GluSerIleArgThrGluGluAsnLeuAlaGlyThrValAspAspGlyProLeuGlnSerGluLysAspTyr-92

98-ArgLeuSerArgLeuLysGluLysAlaLys-107

112-ThrGluGlnGluHisGlyLys-118

125-HisIleGlyGluGlyGly-130

136-LeuSerGlnArgSerProGluAlaPheVal-145

149-TyrLeuTyrArgAsnAspArgProPheSer-158

166-ValHisGlyGluAsnTyrGluThrThrGlyGluTyrArgVal-179

182-GlnProAspGlySerVal-187

190-AlaAlaGlyArgGlyLysIleGlyGluAspValTyr-201

217-LysTyrArgAspValAlaAsnAspGluGlnLysValTrpAspPheArgLysGluSerAsnArgIleAlaSerAspSerArgAsnSerValPheTyrGlnAsnMetArgGluLeuMetProArgGlyMetLysAlaAsnSer-263

267-GlyTyrAspAlaAspGlyLeuProGlnLys-276

280-SerPheAspAsnGlyLysLysArgGlnSerPheGluTyrTyrLeuLysAsnGlyAsn-298

309-LeuLysAlaAspGlyValThr-315

329-LeuAspGlyGlyArgIleValArgGluGluLysGlnGlyAspArgLeuProAspPhe-347

352-GluAsnLeuGluLysGluValArgArgTyrAlaGluAlaAlaAlaArgArgSerGlyGlyArgArgAspLeuSerHis-377

Hydrophilic Regions - Hopp-Woods

38-ThrAlaThrGluValProLysAsnPro-46
57-PheArgAsnAlaAspArgAla-63
69-GluSerIleArgThrGluGluAsnLeu-77
80-ThrValAspAspGlyProLeuGlnSerGluLysAspTyr-92
98-ArgLeuSerArgLeuLysGluLysAlaLys-107
112-ThrGluGlnGluHisGlyLys-118
136-LeuSerGlnArgSerProGlu-142
151-TyrArgAsnAspArgProPhe-157
169-GluAsnTyrGluThrThrGlyGluTyr-177
190-AlaAlaGlyArgGlyLysIleGlyGluAspValTyr-201
217-LysTyrArgAspValAlaAsnAspGluGlnLysValTrpAspPheArgLysGluSerAsnArgIleAlaSer
AspSerArgAsn-244
250-AsnMetArgGluLeuMetProArgGlyMetLys-260
268-TyrAspAlaAspGlyLeuPro-274
282-AspAsnGlyLysLysArgGlnSer-289
309-LeuLysAlaAspGlyValThr-315
331-GlyGlyArgIleValArgGluGluLysGlnGlyAspArgLeuPro-345
352-GluAsnLeuGluLysGluValArgArgTyrAlaGluAlaAlaAlaArgArgSerGlyGlyArgArgAspLeu
SerHis-377

958**AMPHI Regions - AMPHI**

34-AspAsnProThrAlaGlyGluSerValArgSerValSerGluProIleGln-50
86-ProGluAspTyrThrArgIleValAlaAsp-95
127-TyrAspGlnSerGlyAsp-132
176-GlyArgArgLeuGlnSerValSerArgThrAlaGluMet-188
343-IleSerAspThrLeuGln-348
483-TyrTyrSerLeuAsnArgPhe-489
491-SerGlnGluAlaArgArgVal-497
500-ThrLeuProIleVal-504
521-GlyGluValLeuGlnThrLeuGluProArgLeu-531
541-GlnAsnAspLeuProAsnPheAsp-548
572-AsnThrAlaAsnSerLeuSerAlaAlaValGlnSer-583
616-ValGlyLysLysPro-620
693-AspLysLeuSerGln-697
723-LysLysProIleGlu-727
769-AspLeuSerSerValGlyArgAsnPro-777

Antigenic Index - Jameson-Wolf

28-ValAlaAlaGluGluThrAspAsnProThrAlaGlyGluSerValArgSerValSerGluProIleGln-50
55-SerLeuGlySerThr-59
63-CysSerAsnGluSerGlySerProGluArgThrGluAlaAlaValGlnGlySerGlyGluAlaSerIleProG
luAspTyrThrArgIleValAlaAspArgMetGluGlyGlnSerGlnValGlnValArgAlaGluGly-109
111-ValValValGluArgAsnArgThrThrLeuAsn-121
123-AspTrpAlaAspTyrAspGlnSerGlyAspThrValThrAlaGlyAspArgPheAlaLeuGlnGlnAspGly
ThrLeuIleArgGlyGluThrLeu-154
158-LeuGluGlnGlnThrGlyGluAlaHisAsnValArgMetGluIleGluGlnGlyGlyArgArgLeuGlnSer
ValSerArgThrAlaGluMetLeuGlyGluGlyHisTyrLysLeuThrGluThrGlnPheAsnThrCysSerAlaG
lyAspAlaGlyTrp-211
216-AlaSerValGluAlaAspArgGluLysGlyIleGly-227
249-PheProLeuAspGlyAsnArgLysSerGlyLeu-259
265-SerAlaGlySerAspGlyVal-271
293-ValIleGlyGluArgGlyAlaValPheAspGlyGlnValArgTyrLeuArgProAspTyrAlaGlyGlnSer
Asp-317

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321-LeuProHisAspLysLysSerGlyArgAsnAsnArgTyrGlnAla-335
 337-TrpGlnHisArgHisAspIleSerAspThrLeu-347
 352-AspPheAsnGlnValSerAspSerGlyTyrTyrArgAspPheTyrGlyAsnLysGluIleAlaGlyAsnVal
 AsnLeuAsnArgArgValTrp-382
 384-AspTyrGlyGlyArgAlaAlaGlyGlySerLeu-394
 407-AlaAsnGlnSerGlyTyrLysAspLysProTyr-417
 425-ValGluTrpArgLysAsnThrGlyArgAla-434
 444-ArgPheSerHisAspSerArgGlnAspGlySerArg-455
 460-ProAspIleLysTrpAspPheSerAsnSerTrpGly-471
 487-AsnArgPheGlySerGlnGluAlaArgArgValSerArg-499
 507-AspSerGlyAlaThrPheGluArgAsnThrArgMetPheGly-520
 538-AlaLysSerGlnAsnAspLeuProAsnPheAspSerSerGluSerSerPheGly-555
 560-PheArgGluAsnLeuTyrTyrGlyAsnAspArgIleAsnThrAlaAsnSer-576
 581-ValGlnSerArgIleLeuAspGlyAlaThrGlyGluGluArgPheArgAlaGlyIleGlyGlnLysPheTyr
 PheLysAspAspAlaValMetLeuAspGlySerValGlyLysLysProArgAsnArgSerAspTrp-626
 631-SerGlySerIleGlySer-636
 642-SerSerIleHisTyrAsnGlnAsnAspLysArgAlaGluAsn-655
 660-AlaSerTyrArgProAlaGlnGlyLysValLeuAsnAlaArgTyrLysTyrGlyArgAsnGluLysIleTyr
 LeuLysSerAspGlySerTyrPhe-691
 693-AspLysLeuSerGln-697
 718-TyrGlyPheGluAlaLysLysProIleGlu-727
 732-AlaGluTyrLysSerSerCysGlyCysTrp-741
 751-ValThrGlyGluAsnThrTyrLysAsn-759
 766-GlnLeuLysAspLeuSerSerValGlyArgAsnProAlaAspArgMetAspVal-783
 794-LeuSerAlaGlyArgAsnLysArgPro-802

Hydrophilic Regions - Hopp-Woods

28-ValAlaAlaGluGluThrAspAsnProThrAlaGlyGluSerValArgSerValSerGluProIleGln-50
 65-AsnGluSerGlySerProGluArgThrGluAlaAlaVal-77
 79-GlySerGlyGluAlaSerIleProGluAspTyrThr-90
 93-ValAlaAspArgMetGluGlyGlnSer-101
 103-ValGlnValArgAlaGluGly-109
 111-ValValValGluArgAsnArgThrThrLeu-120
 125-AlaAspTyrAspGlnSerGlyAspThrValThrAlaGlyAspArgPheAlaLeu-142
 147-ThrLeuIleArgGlyGluThr-153
 160-GlnGlnThrGlyGluAlaHisAsnValArgMetGluIleGluGlnGlyGlyArgArgLeuGlnSerValSer
 ArgThrAlaGluMetLeuGly-190
 192-GlyHisTyrLysLeuThrGlu-198
 216-AlaSerValGluAlaAspArgGluLysGlyIleGly-227
 250-ProLeuAspGlyAsnArgLysSerGly-258
 266-AlaGlySerAspGlyVal-271
 294-IleGlyGluArgGlyAlaVal-300
 305-ValArgTyrLeuArg-309
 323-HisAspLysLysSerGlyArgAsnAsnArgTyrGlnAla-335
 337-TrpGlnHisArgHisAspIleSerAsp-345
 410-SerGlyTyrLysAspLysProTyr-417
 425-ValGluTrpArgLysAsnThrGlyArgAla-434
 445-PheSerHisAspSerArgGlnAspGlySerArg-455
 490-GlySerGlnGluAlaArgArgValSerArg-499
 510-AlaThrPheGluArgAsnThrArg-517
 539-LysSerGlnAsnAsp-543
 548-AspSerSerGluSer-552
 569-AspArgIleAsnThr-573
 589-AlaThrGlyGluGluArgPheArgAla-597
 604-TyrPheLysAspAspAlaValMet-611

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615-SerValGlyLysLysProArgAsnArgSerAsp-625
 648-GlnAsnAspLysArgAlaGluAsn-655
 662-TyrArgProAlaGln-666
 674-TyrLysTyrGlyArgAsnGluLysIleTyrLeuLysSerAspGly-688
 720-PheGluAlaLysLysProIleGlu-727
 732-AlaGluTyrLysSer-736
 766-GlnLeuLysAspLeuSerSerValGlyArgAsnProAlaAspArgMetAspVal-783
 795-SerAlaGlyArgAsnLysArgPro-802

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AMPHI Regions - AMPHI

56-AlaAlaLeuAlaArgValGlyGly-63

Antigenic Index - Jameson-Wolf

24-AlaHisHisAspGlyHisGlyAspAspAspHisGlyHis-36
 38-AlaHisGlnHisAsnLysGlnAspLysIleIleSer-49
 51-AlaGlnAlaGluLysAlaAlaLeu-58
 60-ArgValGlyGlyLysIleThrAspIleAspLeuGluHisAspAsnGlyArgProHisTyrAspValGluIleValLysAsnGlyGlnGluTyr-90
 94-ValAspAlaArgThrGlyArgValIleSerSerArgArgAspAsp-108

Hydrophilic Regions - Hopp-Woods

27-AspGlyHisGlyAspAspAspHisGlyHis-36
 40-GlnHisAsnLysGlnAspLysIleIleSer-49
 51-AlaGlnAlaGluLysAlaAlaLeu-58
 61-ValGlyGlyLysIleThrAspIleAspLeuGluHisAspAsnGlyArgProHisTyr-79
 82-GluIleValLysAsnGlyGlnGluTyr-90
 94-ValAspAlaArgThrGlyArg-100
 102-IleSerSerArgArgAspAsp-108

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AMPHI Regions - AMPHI

24-AlaProArgLeuLeuProSerPheThrAspPro-34
 39-LeuSerAlaProGlyGlyTyrIleVal-47
 58-IleGluLysLeuAlaLysGlnProGluTyrAlaTyrLeuLysGlnLeuGlnValAlaLysAsnValAsn-80
 137-PheAlaSerLeuAlaSer-142
 154-AspValGlyLysThrLeuLysGluLeuGlyArgSerArgThr-167
 189-LeuAlaThrTrpSerGlu-194
 230-AsnIleLeuAlaAlaLeuValAsnThrAla-239
 245-SerLysIleLysGly-249
 257-HisLysIleAlaHisAlaValAlaGlyCysAla-267
 280-AlaIleGlyAlaAlaValGlyGluIleValGlyGlu-291
 314-IleThrAlaTyrAlaLys-319
 338-GlnThrAlaGlnAsnAla-343

345-GluAsnAsnAlaValLysAlaValValThr-354
 359-ValTyrLysValAlaArgLysGly-366
 387-AsnLeuAlaAspAsnLeuThrThrLeuPheAsp-397
 418-AsnArgAlaAsnLysGlyGluAlaAlaGlnLysValLysGluValLeu-433
 460-LysGlnLeuAlaGlnIle-465

Antigenic Index - Jameson-Wolf

11-LeuTyrArgArgGlySerValLysProProLeu-21
 23-GluAlaProArgLeuLeuProSerPheThrAsp-33
 35-ValValProLysLeuSerAlaProGly-43
 48-AspIleProLysGlyAsnLeuLysThrGluIleGluLysLeuAlaLysGlnProGlu-66
 77-LysAsnValAsnTrp-81

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87-AlaTyrAspLysTrpAspTyrLysGlnGluGlyLeuThr-99
 150-AsnAsnLysGlyAspValGlyLysThrLeuLysGluLeuGlyArgSerArgThrValLys-169
 180-ValSerAsnLysLeuGlyAla-186

 193-SerGluThrProTrp-197
 218-ValAsnGlyGlySerLeuLysAspAsnLeuGlu-228
 239-AlaHisGlyGluAlaAlaSerLysIleLysGlyLeuAsp-251
 270-AlaAlaAsnLysGlyLysCysGlnAspGlyAla-280
 292-AlaLeuValLysAsnThrAspPheSerAspMetThrProGluGlnLeuAspLeuGluValLysLys-313
 329-ThrGlyGlyAspValAsnThr-335
 362-ValAlaArgLysGlyLeuLysAsnGlyLysIleAsnValArgAspLeuLysGlnThrLeuLysAspGluGly
 TyrAsnLeu-388

 398-GluThrLeuAspTrpAsnAspAlaLysAla-407
 415-ThrGluLeuAsnArgAlaAsnLysGlyGluAlaAlaGlnLysValLysGluValLeuGluLysAsnArgPro
 TyrIleProAsnLysGlyAlaValPro-447
 451-ThrTyrMetLysAsnAsnProPheGlyLysGln-461
 465-IleSerGluLysThrThrLeuProThrGlnGlnGlyGlnSer-478
 483-LysArgAsnGlnGlyLeuLeuLysThrGlyAspArgPheTyrLeuAspGlyGlnHisLysAsnHisLeu-50
 5

 507-ValPheAspLysAsnGlyAsnPheLys-515
 520-MetAspGlySerLeuAsnGlnMetLysThrGlyAlaAlaLysGlyArgLysLeuAsnLeu-539

Hydrophilic Regions - Hopp-Woods

13-ArgArgGlySerValLys-18

 49-IleProLysGlyAsnLeuLysThrGluIleGluLysLeuAlaLysGlnProGlu-66
 89-AspLysTrpAspTyrLysGlnGluGlyLeuThr-99
 150-AsnAsnLysGlyAspValGlyLysThrLeuLysGluLeuGlyArgSerArgThrValLys-169
 221-GlySerLeuLysAspAsnLeuGlu-228
 239-AlaHisGlyGluAlaAlaSerLysIleLysGlyLeuAsp-251
 270-AlaAlaAsnLysGlyLysCysGlnAsp-278

 292-AlaLeuValLysAsnThrAspPheSerAspMetThrProGluGlnLeuAspLeuGluValLysLys-313
 362-ValAlaArgLysGlyLeuLysAsnGlyLysIleAsnValArgAspLeuLysGlnThrLeuLysAspGluGly
 TyrAsn-387
 398-GluThrLeuAspTrpAsnAspAlaLysAla-407
 416-GluLeuAsnArgAlaAsnLysGlyGluAlaAlaGlnLysValLysGluValLeuGluLysAsnArgPro-43
 8

 465-IleSerGluLysThrThrLeu-471
 483-LysArgAsnGlnGly-487
 499-GlyGlnHisLysAsnHis-504
 507-ValPheAspLysAsnGlyAsn-513
 522-GlySerLeuAsnGln-526

 528-LysThrGlyAlaAlaLysGlyArgLysLeuAsnLeu-539

961-2**AMPHI Regions - AMPHI**

6-PheProSerLysVal-10
 13-ThrAlaIleLeuAlaThrPheCysSerGly-22
 46-AsnGlyGlnGluIleAsnGlyPheLysAlaGlyGluThrIleTyrAspIle-62

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90-LysValValThrAsnLeuThrLysThrVal-99
 118-GluLysLeuThrThr-122
 138-LeuAspGluThrThrAsnAlaLeuAsnLysLeuGlyGluAsnIleThrThrPheAla-156
 170-LeuGluAlaValAlaAspThrValAspLysHisAlaGluAlaPheAsnAspIleAlaAspSerLeuAsp-192
 200-GluAlaValLysThrAlaAsnGluAlaLysGlnThrAlaGlu-213
 273-AlaArgIleAspSerLeuAspLysAsnValAlaAsnLeuArgLysGluThrArgGlnGlyLeu-293
 300-SerGlyLeuPheGlnProTyrAsnVal-308

Antigenic Index - Jameson-Wolf

27-ThrSerAspAspAspValLysLysAlaAla-36
 45-AsnAsnGlyGlnGluIleAsnGlyPheLysAlaGlyGluThr-58
 60-TyrAspIleGlyGluAspGlyThrIleThrGlnLysAspAlaThrAlaAlaAspValGluAlaAspAspPheLys-84
 98-ThrValAsnGluAsnLysGlnAsnValAspAlaLysValLysAlaAlaGluSerGluIleGluLysLeuThrThrLysLeuAlaAspThrAspAlaAlaLeuAlaAspThrAspAlaAlaLeuAspGluThrThrAsnAlaLeuAsnLysLeuGlyGluAsnIleThr-153
 155-PheAlaGluGluThrLysThrAsnIleValLysIleAspGluLysLeuGluAlaValAlaAspThrValAspLysHisAlaGluAlaPheAsnAspIleAlaAspSerLeuAspGluThrAsnThrLysAlaAspGluAlaValLysThrAlaAsnGluAlaLysGlnThrAlaGluGluThrLysGlnAsnValAspAlaLysValLysAlaAlaGluThrAlaAlaGlyLysAlaGluAlaAlaAla-237
 239-ThrAlaAsnThrAlaAlaAspLysAlaGluAlaValAla-251
 253-LysValThrAspIleLysAlaAspIleAlaThrAsnLysAlaAspIleAlaLysAsnSerAlaArgIleAspSerLeuAspLysAsnValAlaAsnLeuArgLysGluThrArgGlnGlyLeuAla-294
 317-ValGlyGlyTyrLysSerGluSer-324
 330-ThrGlyPheArgPhe-334
 348-ThrSerSerGlySerSerAla-354

Hydrophilic Regions - Hopp-Woods

27-ThrSerAspAspAspValLysLysAlaAla-36
 54-LysAlaGlyGluThr-58
 62-IleGlyGluAspGlyThrIleThrGlnLysAspAlaThrAlaAlaAspValGluAlaAspAspPheLys-84
 98-ThrValAsnGluAsnLysGlnAsnValAspAlaLysValLysAlaAlaGluSerGluIleGluLysLeuThrThrLysLeuAlaAspThrAspAlaAlaLeuAlaAspThrAspAlaAlaLeuAspGluThrThrAsnAla-144
 155-PheAlaGluGluThrLysThrAsnIleValLysIleAspGluLysLeuGluAlaValAlaAspThrValAspLysHisAlaGluAlaPheAsnAspIleAlaAspSerLeuAspGluThrAsnThrLysAlaAspGluAlaValLysThrAlaAsnGluAlaLysGlnThrAlaGluGluThrLysGlnAsnValAspAlaLysValLysAlaAlaGluThrAlaAlaGlyLysAlaGluAlaAlaAla-237
 242-ThrAlaAlaAspLysAlaGluAlaValAla-251
 253-LysValThrAspIleLysAlaAspIleAlaThrAsnLysAlaAspIleAlaLysAsnSerAlaArgIleAspSerLeuAspLysAsnValAlaAsnLeuArgLysGluThrArgGlnGlyLeuAla-294
 320-TyrLysSerGluSer-324

972-2**AMPHI Regions** - AMPHI

15-SerSerGluArgMetSerGluValGluTyrPheSerHis-27
 83-ArgLysLeuGluGluIleLeuGly-90
 100-ArgGlyAsnLysPheTyrGluSerMetTyrArgLeu-111
 154-LeuAspAspSerIleArg-159
 226-PheValArgValTyrGluLysGly-233
 275-IleCysArgLysPheLysAsnMetProValPro-285
 308-AsnAlaValGlyLysLeuValAsnPhe-316
 326-GluIleValGluSerLeuLysAla-333
 336-GlyPheProLysGlyLeuGlu-342
 348-LeuGluMetLeuArgAspGlyLeuLys-356
 382-AsnSerAspLysPheAspArg-388

Antigenic Index - Jameson-Wolf

1-LeuThrAsnArgGlyGlyAlaLysLeuLysThrAsnSerLysSerSerGluArgMetSerGlu-21
 29-IleSerAspGlyLysGlyLysLeuLeuGluIleProGlnArgArgGlyLysGlnAspGlyVal-49
 62-ThrLeuLeuLysValSerGly-68
 83-ArgLysLeuGluGlu-87
 93-IleThrArgLysCysLysSerArgGlyAsnLysPheTyrGlu-106

 108-MetTyrArgLeuGlySerAspAspValAspTyrGly-119
 122-HisPheGlyGlyGlnArgAsnThrVal-130
 134-LeuLysGlyThrGlyCys-139
 152-GlnPheLeuAspAspSerIleArgThrArgIleThrArg-164
 172-PheAspGlyGluTyrThrProAspGlnAlaLeuLeuAspHisAspAsnGlyPhePheAspAsnSerAsnGln
 ArgProLysSerGluThrIleGly-203

 205-AlaTrpArgAsnGluAspGlySerGlyLys-214
 217-TyrValGlyArgLysLysAsnSerArgPhe-226
 228-ArgValTyrGluLysGlyArgGlnLeuGlyAspLysGluSerLysTrpVal-244
 251-AsnTyrGlyAspIleGluIle-257
 263-IleAsnGlnGlySer-267
 275-IleCysArgLysPheLysAsnMetProValProGluArgPheAspGlnArgLysLysLysLeu-295
 321-GlyPheAspAsnSerGluIleValGluSerLeuLysAlaAspSerGlyPheProLysGlyLeuGluProGlu
 LysTyrAla-347
 350-MetLeuArgAspGlyLeuLys-356
 361-HisGluGlnProAspIleAspLeuGluIleGluLeuAspGlu-374

 380-PheLysAsnSerAspLysPheAspArgGluLysArgLeuPheSerProAspTyrAspValGluLysGluArg
 LysTyrGlnGluTyrLeu-409
 417-ValAspTyrAspTyrPhe-422

Hydrophilic Regions - Hopp-Woods

1-LeuThrAsnArgGlyGlyAlaLysLeuLysThrAsnSerLysSerSerGluArgMetSerGlu-21

 30-SerAspGlyLysGlyLysLeuLeuGluIleProGlnArgArgGlyLysGlnAspGlyVal-49
 83-ArgLysLeuGluGlu-87
 93-IleThrArgLysCysLysSerArgGlyAsnLysPheTyr-105
 111-LeuGlySerAspAspValAspTyrGly-119
 134-LeuLysGlyThrGly-138
 152-GlnPheLeuAspAspSerIleArgThrArgIleThrArg-164
 181-AlaLeuLeuAspHisAspAsnGlyPhe-189
 193-SerAsnGlnArgProLysSerGluThrIle-202
 206-TrpArgAsnGluAspGlySerGly-213
 219-GlyArgLysLysAsnSerArgPhe-226
 228-ArgValTyrGluLysGlyArgGlnLeuGlyAspLysGluSerLysTrpVal-244
 277-ArgLysPheLysAsn-281

 283-ProValProGluArgPheAspGlnArgLysLysLysLeu-295
 321-GlyPheAspAsnSerGluIleValGluSerLeuLysAlaAspSerGlyPhe-337

 339-LysGlyLeuGluProGluLysTyrAla-347
 350-MetLeuArgAspGlyLeuLys-356
 362-GluGlnProAspIleAspLeuGluIleGluLeuAspGlu-374

 381-LysAsnSerAspLysPheAspArgGluLysArgLeuPhe-393

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396-AspTyrAspValGluLysGluArgLysTyrGlnGluTyrLeu-409

973-2**AMPHI Regions - AMPHI**

12-GluArgLeuIleAlaArgLeuAlaArgGluProAspSerAlaGluAspValLeuAsnLeuLeuArgGlnAla-35

44-AspThrLeuLeuArgLeuGluLysValLeuAspPhe-55

77-AspSerIleGluArgIleThrAlaTyr-85

112-AspLeuLeuLysTyrMet-117

143-AlaLeuLeuLysGluPheArgGluGln-151

171-PheGluAspIleIleGluGlnIleValGlyGluIleGluAsp-184

194-AsnIleHisAlaVal-198

208-AlaThrGluIleGluAspIleAsnThrPhe-217

235-IleGlnGluLeuGly-239

Antigenic Index - Jameson-Wolf

1-MetAspGlyAlaGlnProLysThrAsnPhe-10

18-LeuAlaArgGluProAspSerAlaGluAspVal-28

34-GlnAlaHisGluGlnGluValPheAspAlaAspThr-45

47-LeuArgLeuGluLysValLeuAsp-54

56-SerAspLeuGluValArgAspAlaMetIleThrArgSerArgMetAsnValLeuLysGluAsnAspSerIleGluArg-81

96-ValIleGlyGluAspLysAspGluVal-104

118-PheAsnProGluGlnPheHis-124

136-ProGluGlyLysSer-140

146-LysGluPheArgGluGlnArgAsnHis-154

159-IleAspGluTyrGlyGlyThrSerGly-167

178-IleValGlyGluIleGluAspGluPheAspGluAspAspSerAlaAspAsn-194

199-SerSerGluArgTrpArg-204

209-ThrGluIleGluAspIleAsn-215

218-PheGlyThrGluTyrSerSerGluGluAlaAspThr-229

239-GlyHisLeuProValArgGlyGluLysValLeu-249

258-AlaArgAlaAspAsnArgArgLeuHis-266

Hydrophilic Regions - Hopp-Woods

1-MetAspGlyAlaGlnProLys-7

18-LeuAlaArgGluProAspSerAlaGluAspVal-28

34-GlnAlaHisGluGlnGluValPheAsp-42

47-LeuArgLeuGluLysValLeuAsp-54

56-SerAspLeuGluValArgAspAlaMetIleThrArgSerArgMetAsnValLeuLysGluAsnAspSerIleGluArg-81

96-ValIleGlyGluAspLysAspGluVal-104

136-ProGluGlyLysSer-140

146-LysGluPheArgGluGlnArgAsn-153

178-IleValGlyGluIleGluAspGluPheAspGluAspAspSerAlaAspAsn-194

199-SerSerGluArgTrpArg-204

209-ThrGluIleGluAsp-213

222-TyrSerSerGluGluAlaAspThr-229

243-ValArgGlyGluLysValLeu-249

258-AlaArgAlaAspAsnArgArgLeuHis-266

981-2**AMPHI Regions - AMPHI**

33-AlaAsnProAspLysValTyrArgValAlaSer-43

48-AlaProPheGluSerLeuAsp-54

68-AsnAlaMetAlaLys-72

134-LysValSerSerSerGluAspLeuLysAsnMetAsnLysValGlyValVal-150

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169-LysIleAlaArgPheGlu-174
 183-LeuGluAsnGlyGlyLeuAspSerValVal-192
 199-AlaAsnTyrValLysAsnAsnPro-206
 209-GlyMetAspPheValThrLeuPro-216
 235-VallLysMetLeuAsnAspAlaLeuGluLysValArgGluSerGlyGluTyr-251

Antigenic Index - Jameson-Wolf

21-CysGlyGlyGlnGlyLysAspThrAlaAla-30
 33-AlaAsnProAspLysValTyrArg-40
 51-GluSerLeuAspSerLysGlyAsnValGluGlyPheAsp-63
 78-IleGluPheLysHisGlnProTrpAspSer-87
 92-LeuAsnAsnGlyAspAlaAspVal-99
 106-IleThrAspAspArgLysGlnSerMetAspPheSerAspProTyrPhe-121
 129-ValProLysGlyLysLysValSerSerSerGluAspLeuLysAsnMetAsnLys-146
 162-LeuLeuGlyAsnAspAsnProLysIleAlaArg-172
 181-LysGluLeuGluAsnGlyGlyLeuAspSerValValSerAspSerAla-196
 203-LysAsnAsnProAlaLysGlyMetAspPhe-212
 216-ProAspPheThrThr-220
 227-ValArgLysGlyAspGluAlaThrVal-235
 237-MetLeuAsnAspAlaLeuGluLysValArgGluSerGlyGluTyrAspLysIleTyr-255
 259-PheAlaLysGluAspGlyGlnAlaAlaLys-268

Hydrophilic Regions - Hopp-Woods

23-GlyGlnGlyLysAspThrAlaAla-30
 33-AlaAsnProAspLysValTyrArg-40
 51-GluSerLeuAspSerLysGlyAsnValGluGlyPheAsp-63
 93-AsnAsnGlyAspAlaAspVal-99
 106-IleThrAspAspArgLysGlnSerMetAspPheSer-117
 130-ProLysGlyLysLysValSerSerSerGluAspLeuLysAsnMetAsn-145
 166-AspAsnProLysIleAlaArg-172
 181-LysGluLeuGluAsnGlyGlyLeu-188
 205-AsnProAlaLysGlyMetAsp-211
 227-ValArgLysGlyAspGluAlaThrVal-235
 237-MetLeuAsnAspAlaLeuGluLysValArgGluSerGlyGluTyrAspLysIleTyr-255
 259-PheAlaLysGluAspGlyGlnAlaAlaLys-268

982**AMPHI Regions - AMPHI**

12-ValArgGlnLysMetValAsnGlyValAsnIleLeuAlaAsnAlaVal-27
 71-AlaGlnMetValLysGluValAlaSerLysThr-81
 100-ValAlaGluGlyMetLysTyr-106
 115-AspLeuLysArgGlyIleAspLysAlaValAlaAlaLeuValAspGluLeuLysAsnIleAlaLysProCys
 AspThrSerLysGluIleAlaGlnValGlySer-149
 160-AlaIleIleAlaGluAlaMetGluLysValGly-170
 185-AsnGluLeuAspValValGluGlyMet-193
 209-GluLysGlnIleAlaAla-214
 227-IleSerAsnIleArgAspLeuLeuProValLeuGluGlnValAlaLysAla-243
 265-AsnAsnIleArgGlyIleLeuLysThrValAla-275
 313-ThrLeuAspAspLeuGlyGlnAlaLysArgIle-323
 331-ThrIleIleAspGlyPheGlyAspAlaAla-340
 367-GluArgValAlaLysLeuAlaGlyGlyVal-376
 426-LeuGluAsnLeuHisThr-431
 444-LeuArgAlaValGluSerProLeuArgGlnIleValAlaAsnAla-458
 484-GluTyrGlyAspMetIleGluMet-491
 500-ThrArgSerAlaLeu-504

Antigenic Index - Jameson-Wolf

1-MetAlaAlaLysAspValGlnPhe-8
 10-AsnGluValArgGlnLysMetValAsn-18
 30-ThrLeuGlyProLysGlyArgAsnValValVal-40
 43-AlaPheGlyGlyProHisIleThrLysAspGlyValThrValAlaLysGluIleGluLeuLysAspLysPheGluAsnMetGly-70
 73-MetValLysGluValAlaSerLysThrAsnAspValAlaGlyAspGlyThrThr-90
 112-AsnProThrAspLeuLysArgGlyIleAspLysAlaVal-124
 129-AspGluLeuLysAsnIleAlaLysProCysAspThrSerLysGluIleAla-145
 150-IleSerAlaAsnSerAspGluGlnVal-158
 164-GluAlaMetGluLysValGlyLysGluGlyValIleThrValGluAspGlyLysSerLeuGluAsnGluLeuAspVal-189
 193-MetGlnPheAspArgGlyTyr-199
 207-AspAlaGluLysGlnIleAla-213
 223-PheAspLysLysIleSerAsnIleArgAsp-232
 239-GlnValAlaLysAlaSerArg-245
 252-GluAspValGluGlyGluAla-258
 266-AsnIleArgGlyIleLeu-271
 278-AlaProGlyPheGlyAspArgArgLysAlaMetLeu-289
 303-GluGluValGlyLeuSerLeuGluLysAlaThrLeuAspAspLeuGlyGlnAlaLysArgIleGluIleGlyLysGluAsnThrThr-331
 334-AspGlyPheGlyAspAlaAlaGlnIleGluAlaArgValAlaGluIleArgGlnGlnIleGluThrAlaThrSerAspTyrAspLysGluLysLeuGlnGluArgValAlaLysLeuAlaGly-374
 385-ThrGluValGluMetLysGluLysLysAspArgValGluAspAlaLeuHis-401
 405-AlaAlaValGluGluGlyVal-411
 421-ArgAlaArgAlaAlaLeu-426
 430-HisThrGlyAsnAlaAspGlnAspAlaGlyVal-440
 446-AlaValGluSerProLeuArg-452
 455-ValAlaAsnAlaGlyGlyGluProSerVal-464
 469-ValLeuGluGlyLysGlyAsnTyrGlyTyr-478
 480-AlaGlySerGlyGluTyrGlyAspMetIleGlu-490
 495-AspProAlaLysValThrArgSerAlaLeu-504
 523-GluIleProGluAspLysProAlaValProAspMetGlyGly-536

Hydrophilic Regions - Hopp-Woods

1-MetAlaAlaLysAspValGlnPhe-8
 10-AsnGluValArgGlnLysMet-16
 33-ProLysGlyArgAsnValValVal-40
 48-HisIleThrLysAspGlyValThrValAlaLysGluIleGluLeuLysAspLysPheGluAsn-68
 73-MetValLysGluValAlaSerLysThrAsnAspValAlaGlyAspGlyThrThr-90
 114-ThrAspLeuLysArgGlyIleAspLysAlaVal-124
 129-AspGluLeuLysAsnIleAlaLysProCysAspThrSerLysGluIleAla-145
 152-AlaAsnSerAspGluGlnVal-158
 164-GluAlaMetGluLysValGlyLysGluGlyValIleThrValGluAspGlyLysSerLeuGluAsnGluLeuAspVal-189
 207-AspAlaGluLysGlnIleAla-213
 223-PheAspLysLysIleSerAsnIleArgAsp-232
 239-GlnValAlaLysAlaSerArg-245
 252-GluAspValGluGlyGluAla-258
 280-GlyPheGlyAspArgArgLysAlaMetLeu-289
 303-GluGluValGlyLeuSerLeuGluLysAlaThrLeuAspAspLeuGlyGlnAlaLysArgIleGluIleGlyLysGluAsnThrThr-331
 340-AlaGlnIleGluAlaArgValAlaGluIleArgGlnGlnIleGluThrAlaThrSerAspTyrAspLysGluLysLeuGlnGluArgValAlaLys-371
 385-ThrGluValGluMetLysGluLysLysAspArgValGluAspAlaLeuHis-401

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405-AlaAlaValGluGluGlyVal-411
 421-ArgAlaArgAlaAlaLeu-426
 433-AsnAlaAspGlnAspAla-438
 446-AlaValGluSerProLeu-451
 458-AlaGlyGlyGluPro-462
 469-ValLeuGluGlyLysGly-474
 481-GlySerGlyGluTyrGlyAsp-487
 495-AspProAlaLysValThrArg-501
 523-GluIleProGluAspLysProAlaVal-531

986-2**AMPHI Regions - AMPHI**

6-GlnTyrLeuAlaLeuAla-11
 18-LeuAlaGlyCysAspLysAlaGly-25
 36-SerPheValGluArgIleGluHis-43
 55-ProAspPheAlaGlnLeuValGln-62
 99-PheTyrGluPhePheLysArgLeuValProAsnMetProGluIleProGln-115
 145-ThrGlyMetGlySerIle-150
 162-AlaLysLeuIleGlySerAspVal-169
 189-IleGlyAsnProLysAspLeuLysProGly-198
 200-TrpValAlaAlaIleGly-205
 287-AlaGluGlnLeuLysAsnThrGlyLysVal-296
 393-AlaAlaGluHisIleGlyAlaSer-400
 471-ArgLysAlaMetAspLysAla-477

Antigenic Index - Jameson-Wolf

1-ValPheLysLysTyr-5
 20-GlyCysAspLysAlaGly-25
 29-GlyAlaAspLysLysGluAlaSerPheValGluArgIleGluHisThrLysAspAspGlySerVal-50
 61-ValGlnSerGluGlyProAla-67
 75-ProAlaProArgThrGlnAsnGlySerGlyAsnAlaGluAsnAspSerAspProIleAlaAspAsnAspProPhe-99
 104-LysArgLeuValProAsnMetProGluIleProGlnGluGluAlaAspAspGlyGlyLeu-123
 130-IleIleSerLysAspGlyTyr-136
 154-LeuAsnAspLysArgGluTyrThr-161
 165-IleGlySerAspValGlnSerAspValAla-174
 179-AspAlaThrGluGluLeuPro-185
 189-IleGlyAsnProLysAspLeuLysProGlyGlu-199
 208-PheGlyPheAspAsnSerVal-214
 219-ValSerAlaLysGlyArgSerLeuProAsnGluSerTyr-231
 242-AsnProGlyAsnSerGlyGlyPro-249
 265-TyrSerArgSerGlyGly-270
 288-GluGlnLeuLysAsnThrGlyLysValGlnArgGlyGlnLeu-301
 316-PheGlyLeuAspLysAlaGlyGly-323
 330-LeuProGlySerProAlaGluArgAlaGlyLeuGlnAlaGlyAsp-344
 349-LeuAspGlyGlyGluIleArgSerSerGlyAspLeu-360
 368-ThrProGlyLysGluValSer-374
 378-TrpArgLysGlyGluGluIleThrIle-386
 397-IleGlyAlaSerSerLysThrAspGluAlaProTyrThrGluGlnGlnSerGlyThrPhe-416
 427-ThrHisThrAspSerSerGlyGly-434
 440-ArgValSerAspAlaAlaGluArgAlaGlyLeuArgArgGlyAspGluIleLeu-457
 463-ProValAsnAspGluAlaGlyPheArgLysAlaMetAspLysAlaGlyLysAsnVal-481
 486-MetArgArgGlyAsnThr-491

Hydrophilic Regions - Hopp-Woods

20-GlyCysAspLysAlaGly-25

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29-GlyAlaAspLysLysGluAlaSerPheValGluArgIleGluHisThrLysAspAspGlySer-49
 75-ProAlaProArgThrGlnAsnGlySerGlyAsnAlaGluAsnAspSerAspProIleAlaAspAsnAspPro-
 98
 111-ProGluIleProGlnGluGluAlaAspAspGlyGly-122
 131-IleSerLysAspGly-135
 154-LeuAsnAspLysArgGluTyrThr-161
 179-AspAlaThrGluGluLeuPro-185
 190-GlyAsnProLysAspLeuLysPro-197
 221-AlaLysGlyArgSerLeuPro-227
 288-GluGlnLeuLysAsnThrGlyLysValGlnArgGlyGln-300
 317-GlyLeuAspLysAlaGly-322
 333-SerProAlaGluArgAlaGlyLeuGln-341
 350-AspGlyGlyGluIleArgSerSerGlyAsp-359
 368-ThrProGlyLysGluValSer-374
 379-ArgLysGlyGluGluIleThrIle-386
 397-IleGlyAlaSerSerLysThrAspGluAlaProTyrThrGluGlnGlnSer-413
 428-HisThrAspSerSerGly-433
 440-ArgValSerAspAlaAlaGluArgAlaGlyLeuArgArgGlyAspGluIleLeu-457
 463-ProValAsnAspGluAlaGlyPheArgLysAlaMetAspLysAlaGlyLys-479
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AMPHI Regions - AMPHI

17-CysSerSerTrpLeu-21
 33-PheAsnThrSerLysProValArgLeuAspAsnIleLeuGlnIle-47
 65-ProHisGluAlaPhe-69
 144-AsnProPheValLeuArgLysTrpArgAlaLeuGlyTyrLeuThrAspPheProArgLeuAsnArg-165
 187-GlyAspGluTyrPheLysVal-193
 202-LeuAspIleLeuAlaThr-207
 211-ValGlyGluValSerHisAspPheAspArgTyrTrpAla-223
 230-AlaThrArgIleIleArgSerGlyAspIleGlyLysGlyLeuGlnAla-245
 290-AspAspProAlaLysGlyLeuAspArg-298
 307-GlyArgLeuGlnAspAlaLeuLysGlnPro-316
 333-GlyThrAspAlaLeuAlaLysLeuValGlnAsp-343
 355-GlnAlaThrAspValAlaAla-361
 443-LysIleAlaGluGlnMetGluArgThrLeu-452
 486-ProGluAlaLysLeuTrpLysArgIleAlaAlaLysIleLeuSerLeuLeuProIleGluGlyLeu-507

Antigenic Index - Jameson-Wolf

1-MetLysThrArgSer-5
 23-ProLeuGluGluArgThrGluSerArgHisPheAsnThrSerLysProValArgLeu-41
 49-HisThrProHisThrAsnGlyLeuSer-57
 77-GluSerAlaGluHisSerLeu-83
 90-TrpArgAsnAspIleSerGlyArgLeu-98
 107-AlaGluArgGlyValArg-112
 115-LeuLeuLeuAspAspAsnAsnThrArgGlyLeuAsp-126
 134-SerHisProAsnIleGluValArgLeu-142
 159-AspPheProArgLeuAsnArgArgMetHisAsnLysSerPheThrAlaAspAsnArgAla-178
 182-GlyGlyArgAsnIleGlyAspGluTyrPheLysValGlyGluAspThrVal-198
 214-ValSerHisAspPheAspArgTyrTrp-222
 225-HisSerAlaHisAsn-229
 232-ArgIleIleArgSerGlyAspIleGlyLysGlyLeu-243
 247-GlyTyrAsnAspGluThrSerArg-254
 259-ArgTyrArgGluThrValGlu-265
 267-SerProLeuTyrGln-271
 282-SerValArgThrArgLeuIleSerAspAspProAlaLysGlyLeuAspArgAspArgArgLysProProIle-
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308-ArgLeuGlnAspAlaLeuLysGlnProGluLysSer-319
 328-ValProThrLysSerGlyThrAspAlaLeu-337
 340-LeuValGlnAspGlyIleAsp-346
 367-ValLysTyrArgLysProLeuLeu-374
 391-AlaThrLysAspLysGlyLeuThrGlySerSer-401
 412-ValAspGlyLysArgIlePhe-418
 422-PheAsnLeuAspProArgSerAlaArgLeuAsnThr-433
 440-GluSerProLysIleAlaGluGlnMetGluArgThrLeuAlaAspThrThrPro-457
 463-ValThrLeuAspArgHisAsnArgLeuGlnTrpHisAspProAlaThrArgLysThrTyrProAsnGluPro
 GluAlaLysLeuTrpLys-492

Hydrophilic Regions - Hopp-Woods

1-MetLysThrArgSer-5
 24-LeuGluGluArgThrGluSerArgHisPheAsnThr-35
 37-LysProValArgLeu-41
 77-GluSerAlaGluHisSerLeu-83
 107-AlaGluArgGlyValArg-112
 115-LeuLeuLeuAspAspAsnAsnThrArgGlyLeuAsp-126
 161-ProArgLeuAsnArgArgMetHisAsn-169
 172-PheThrAlaAspAsnArgAla-178
 189-GluTyrPheLysValGlyGluAspThrVal-198
 214-ValSerHisAspPheAspArg-220
 232-ArgIleIleArgSerGlyAspIleGlyLys-241
 248-TyrAsnAspGluThrSerArg-254
 259-ArgTyrArgGluThrValGlu-265
 282-SerValArgThrArgLeuIleSerAspAspProAlaLysGlyLeuAspArgAspArgLysProProIle
 -305
 308-ArgLeuGlnAspAlaLeuLysGlnProGluLysSer-319
 331-LysSerGlyThrAspAlaLeu-337
 340-LeuValGlnAspGlyIleAsp-346
 367-ValLysTyrArgLysProLeuLeu-374
 391-AlaThrLysAspLysGlyLeuThr-398
 424-LeuAspProArgSerAlaArgLeuAsnThr-433
 440-GluSerProLysIleAlaGluGlnMetGluArgThrLeuAla-453
 464-ThrLeuAspArgHisAsnArg-470
 476-ProAlaThrArgLysThrTyrProAsnGluProGluAlaLysLeuTrpLys-492

988-2**AMPHI Regions - AMPHI**

45-SerLysIleGluSerLeuAlaArg-52
 125-GlnMetArgGlyIle-129
 154-AspIleValGluArgAlaGlnSerLysVal-163
 221-AlaLysIleIleGluValLeuGlyAspTyrAlaAsp-232
 248-HisGlnPheSerGluAlaCysAlaLysAlaAlaLysLysIle-261
 288-ThrAlaArgAspPheAspAsp-294
 299-GluLysValGlyArgAsnTyr-305
 310-AlaIleAlaAspValSerHisTyrValArgProAspAspValIleAsp-325
 348-AsnLeuSerAsnGly-352
 396-AsnGlnValTrpLysTrpIleSerAspGlyIleAspHisPro-409

 411-LysAlaGlnIleAspThrLeuTyrLysLeuPheLysIleLeuGlnLys-426
 494-LeuGlyProThrProGluLysLeuAlaThrLeu-504
 526-TyrAlaAlaLeuValGluGlnPheLys-534
 544-ValMetMetLeuArgSerMetGlnGlnAla-553
 569-AlaTyrAlaHisPheThrSerProIleArgArgTyrProAspLeuThrValHisArgAlaIleLysAlaVal
 Leu-593

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619-AspAspAlaSerArgAspValGluAsnTrpLeuLys-630
646-IleSerGlyMetThrSerPheGlyIlePheValThrLeu-658
662-HisIleAspGlyLeuValHisIleSerAspLeuGlyGlu-674

Antigenic Index - Jameson-Wolf

1-MetAsnLysAsnIleLys-6

8-LeuAsnLeuArgGluLysAspProPheLeuSerArgGluLysGlnArgTyrGluHisProLeuProSerArgGluTrpIle-34

37-LeuLeuGluArgLysGlyValProSerLysIleGluSerLeuAlaArgGluLeuSerIleThrGluAspGluTyrValPhePheGluArgArgLeuLysAlaMetAlaArgAspGlyGln-76

79-IleAsnArgArgGlyAlaVal-85

87-AlaAlaAspLysLeuAspLeuValLysCysArgValGluAlaHisLysAspGlyPhe-105

111-LeuThrProAlaLysAspGlyAsp-118

124-ArgGlnMetArgGly-128

138-ArgProAlaGlyMetAspArgArgGlyArgArgGluGlyThrVal-152

155-IleValGluArgAlaGlnSerLysValVal-164

168-TyrMetAspArgGlyValAla-174

176-LeuGluProGluAspLysArgLeuAsnGln-185

189-LeuGluProAspGlyValAlaArgPheLysProGluSerGlyGln-203

210-GluValTyrProGluGlnAsnArgProAlaVal-220

227-LeuGlyAspTyrAlaAspSerGlyMetGluIle-237

239-IleAlaValArgLysHisHisLeu-246

253-AlaCysAlaLysAlaAlaLysLysIleProValHisValArgLysSerAspLeuLysGlyArgValAspLeuArgAsp-278

283-ThrIleAspGlyGluThrAlaArgAspPheAspAsp-294

299-GluLysValGlyArgAsnTyrArg-306

316-HisTyrValArgProAspAspValIleAspAlaAspAlaGlnGluArgSerThrSer-334

337-PheProArgArgVal-341

345-LeuProGluAsnLeuSerAsnGly-352

356-LeuAsnProAspValGluArgLeu-363

374-AlaGlyAsnIleLysGluTyrArgPhe-382

402-IleSerAspGlyIleAspHisProTyrLysAlaGlnIle-414

424-LeuGlnLysLysArgPheGluArgGlyAlaValGluPheGluSerValGlu-440

443-MetIlePheAspAspAsnGlyLysIleGluLys-453

458-ValArgAsnAspAlaHisLysLeuIleGlu-467

482-LeuLysAsnLysHisThrAla-488

493-HisLeuGlyProThrProGluLysLeuAlaThrLeuArgGluGlnLeu-508

516-GlyGlyGlyAspAsnProSerProLysAspTyr-526

532-GlnPheLysGlyArgProAspAlaGluLeu-541

556-GluProHisCysAspGlyHis-562

575-SerProIleArgArgTyrProAspLeuThrVal-585

597-ThrTyrThrProLysLysSerTrp-604

613-PheCysGluArgArgAlaAspAspAlaSerArgAspValGluAsn-627

633-TyrMetArgAspLysValGlyGluValPheGluGlyLysIleSerGly-648

670-SerAspLeuGlyGluAspTyrPheAsnPheArgPro-681

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683-IleMetAlaIleGluGlyGluArgSerGlyIleArgPheAsnMetGlyAspArgValAlaValArgValAla
ArgAlaAspLeuAspAspGlyLysIle-715

722-GlyGlySerGlyArgGlyArgLysValLysSerSerAlaSerAlaLysProAlaGlyThrAlaGlyLysGly
LysProLysThrAlaAlaGluLysLysThrAlaArgGlyGlyLysValArgGlyArgGlyAlaSerAlaAlaAlaG
luSerArgLysLysAlaLysLysProValProIleLysValLysLysArgLysGlyLysSer-791

Hydrophilic Regions - Hopp-Woods

1-MetAsnLysAsnIleLys-6

8-LeuAsnLeuArgGluLysAspProPheLeuSerArgGluLysGlnArgTyrGluHis-26

37-LeuLeuGluArgLysGlyValProSerLysIleGluSerLeuAlaArgGluLeuSerIleThrGluAspGluT
yrValPhePheGluArgArgLeuLysAlaMetAlaArgAspGlyGln-76

79-IleAsnArgArgGlyAla-84

87-AlaAlaAspLysLeuAspLeuValLysCysArgValGluAlaHisLysAspGlyPhe-105

113-ProAlaLysAspGlyAsp-118

140-AlaGlyMetAspArgArgGlyArgArgGluGlyThrVal-152

155-IleValGluArgAlaGlnSerLysValVal-164

176-LeuGluProGluAspLysArgLeuAsn-184

189-LeuGluProAspGlyValAlaArgPheLysProGluSerGly-202

210-GluValTyrProGluGlnAsnArgProAlaVal-220

230-TyrAlaAspSerGlyMetGluIle-237

239-IleAlaValArgLysHisHis-245

253-AlaCysAlaLysAlaAlaLysLysIleProValHisValArgLysSerAspLeuLysGlyArgValAspLeu
ArgAsp-278

284-IleAspGlyGluThrAlaArgAspPheAspAsp-294

299-GluLysValGlyArgAsnTyr-305

318-ValArgProAspAspValIleAspAlaAspAlaGlnGluArgSerThr-333

358-ProAspValGluArg-362

376-AsnIleLysGluTyrArg-381

405-GlyIleAspHisProTyr-410

424-LeuGlnLysLysArgPheGluArgGlyAlaValGluPheGluSerValGlu-440

443-MetIlePheAspAspAsnGlyLysIleGluLys-453

458-ValArgAsnAspAlaHisLysLeuIleGlu-467

496-ProThrProGluLysLeuAlaThrLeuArgGluGlnLeu-508

517-GlyGlyAspAsnProSerProLysAspTyr-526

532-GlnPheLysGlyArgProAspAlaGluLeu-541

576-ProIleArgArgTyrProAsp-582

598-TyrThrProLysLysSerTrp-604

613-PheCysGluArgArgAlaAspAspAlaSerArgAspValGluAsn-627

633-TyrMetArgAspLysValGlyGluValPheGluGlyLysIle-646

683-IleMetAlaIleGluGlyGluArgSerGlyIle-693

696-AsnMetGlyAspArgValAlaValArgValAlaArgAlaAspLeuAspAspGlyLysIle-715

723-GlySerGlyArgGlyArgLysValLysSerSerAlaSerAlaLysProAlaGlyThrAlaGlyLysGlyLys
ProLysThrAlaAlaGluLysLysThrAlaArgGlyGlyLysValArgGlyArgGlyAlaSerAlaAlaAlaGluS
erArgLysLysAlaLysLysProValProIleLysValLysLysArgLysGlyLysSer-791

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AMPHI Regions - AMPHI

58-AlaGlyLeuThrLysLeu-63

85-SerAlaThrAspPhe-89

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98-LysSerGlyLysIleThr-103
109-ProHisIleTyrGlyAla-114
183-GluLeuArgLysTyrAlaAsp-189
205-LysProAsnGlyValAlaGluAla-212
273-AlaMetTrpSerThr-277
301-SerValHisGlyMetTyrLysValSer-309
320-TrpThrArgHisSerArg-325
364-SerTyrGlnIleSerGluProLeu-371
450-PheLysAsnHisAlaAsp-455

Antigenic Index - Jameson-Wolf

46-GluAlaAlaAspAlaSer-51
57-ProAlaGlyLeuThrLysLeuAspSerSerGlnIle-68
81-TyrGluAlaAspSerAlaThrAspPheThr-90
95-GlnGlySerLysSerGlyLysIleThrLysThrThr-106
116-LysValAsnAspAsnLeuThr-122
132-GlySerAlaThrGluTyrGluLysAspSerValLeu-143
146-AsnIleAsnLysLeuGly-151
164-LysLeuAsnAspArgHisSerPheGly-172
180-ThrSerAlaGluLeuArgLysTyrAla-188
191-GlyIleLysSerLysAlaGluIleLeuThrAlaLysProProLysProAsnGlyValAlaGluAlaAlaLys
IleGlnAlaAspGlyHisAlaAspValLysGlySerAspTrpGly-229
239-AspIleAsnAspArgAlaArgValGlyValAsnTyrArgSerLysValSerHisThrLeuLysGlyAspAla
GluTrpAlaAla-266
285-ThrAlaAsnGluLysAlaArgValLysIleValThrProGluSer-299
306-TyrLysValSerAspLysAlaAspLeu-314
319-ThrTrpThrArgHisSerArgPheAspLysAlaGluLeuValPheGluLysGluLysThrValValLysGly
LysSerAspArgThrThrIle-349
351-ProAsnTrpArgAsnThrTyrLys-358
363-GlySerTyrGlnIleSerGlu-369
377-IleAlaPheAspLysSerProValArgAsnAlaAspTyrArgMetAsnSerLeuProAspGlyAsn-398
409-HisIleGlyLysAsnHisVal-415
426-AsnAspThrSerTyrArgThrAlaLysAlaSerGlyAsnAspValAspSerLysGlyAlaSerSerAlaArg
PheLysAsnHisAla-454

Hydrophilic Regions - Hopp-Woods

61-ThrLysLeuAspSerSerGln-67
81-TyrGluAlaAspSerAlaThr-87
95-GlnGlySerLysSerGlyLysIleThrLys-104
135-ThrGluTyrGluLysAspSerValLeu-143
164-LysLeuAsnAspArgHisSer-170
180-ThrSerAlaGluLeuArgLysTyrAla-188
191-GlyIleLysSerLysAlaGluIleLeuThr-200
202-LysProProLysProAsnGlyValAlaGluAlaAlaLysIleGlnAla-217
219-GlyHisAlaAspValLysGlySerAsp-227
240-IleAsnAspArgAlaArgVal-246
250-TyrArgSerLysVal-254
258-LeuLysGlyAspAlaGluTrpAlaAla-266
285-ThrAlaAsnGluLysAlaArgValLysIleValThr-296
307-LysValSerAspLysAlaAspLeu-314
324-SerArgPheAspLysAlaGluLeuValPheGluLysGluLysThrValValLysGlyLysSerAspArgThr
ThrIle-349
377-IleAlaPheAspLysSerProValArgAsnAlaAspTyrArgMet-391
393-SerLeuProAspGlyAsn-398

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428-ThrSerTyrArgThrAlaLysAlaSerGlyAsnAspValAspSerLysGlyAlaSerSerAlaArgPheLys
AsnHisAla-454

990**AMPHI Regions - AMPHI**

89-LysSerGlnLeuGlnAspLeuTyrLys-97
128-ThrMetProAspLeuIleAsnLysLeuVal-137
151-ThrSerLeuAsnAsnIlePhe-157
191-ArgArgHisSerAspIleHisThrLeuGluThrSerAsp-203
260-ProGluAsnLeuLysThrLeuAspGly-268
293-TyrGluLeuLeuLeuLysGlnCys-300
372-AlaAspGlyTrpArgLysGlyVal-379
423-GlyTyrGlyGlyGlyValTyrAlaAlaTrp-432
442-AlaTyrLeuAspGlyTrpLeuGlnTyr-450
472-ThrAlaSerValGluGlyGlyTyrAsnAlaLeu-482
550-GlnProPheAlaAlaPheAsnValLeuHisArg-560

Antigenic Index - Jameson-Wolf

6-LeuGlySerAsnThrArgSerThrLysIleGlyAspAspAlaAspPheSerPheSerAspLysProLysProGlyThr-31
35-PheSerSerGlyLysThrAspGlnAsnSerSerGluTyrGlyTyrAspGluIleAsnIleGlnGlyLysAsnTyrAsnSerGlyIle-63
75-TyrIleThrGluLysTyrGlyAlaAspLeuLysGlnAlaVal-88
90-SerGlnLeuGlnAspLeuTyrLysThrArgProGluAlaTrpAlaGluAsnLysLysArgThrGluGluAlaTyr-114
120-ThrLysPheSerThrLeuLysGlnThrMetPro-130
145-HisSerAsnThrSerGlnThrSer-152
157-PheAsnLysLysLeuHisValLysIleGluAsnLysSerHisVal-171
179-ThrLysMetThrLeuLysAspSerLeuTrpGluProArgArgHisSerAspIleHisThrLeuGluThrSerAspAsnAlaArgIleArgLeuAsnThrLysAspGluLysLeuThrValHisLysAspTyrAlaGlyGlyAlaAsp-227
232-TyrAspValArgGluSerAspGluProAlaLeuThrPheGluAspLysValSerGlyGlnSerGlyValValLeuGluArgArgProGluAsnLeuLysThrLeuAspGlyArgLysLeuIleAla-273
275-LysThrAlaAspSerGlySerPheAlaPheLysGlnAsnTyrArgGlnGlyLeu-292
298-LysGlnCysGluGlyGlyPhe-304
312-AlaIleProGluAlaGlu-317
335-ArgAlaAlaAspArgGlyAspAspValTyrAlaAlaAspProSerArgGlnLysLeu-353
358-IleGlyGlyArgSerHisGlnAsnIleArgGlyGlyAlaAlaAlaAspGlyTrpArgLysGlyVal-379
385-ValPheValArgGlnAsnGluGlySerArgLeuAla-396
400-MetGlyGlyArgAlaGlyGln-406
408-AlaSerValAsnGlyLysGlyGlyAlaAlaGlySerAspLeu-421
435-LeuArgAspLysGlnThrGlyAlaTyr-443
452-ArgPheLysHisArgIleAsnAspGluAsnArgAlaGluArgTyrLysThrLysGlyTrpThr-472
475-ValGluGlyGlyTyr-479
487-IleValGlyLysGlyAsnAsnValArg-495
510-AsnGlyGlyPheThrAspSerGluGlyThrAla-520
525-GlySerGlyGlnTrpGlnSerArgAlaGlyIleArgAlaLysThrArgPheAlaLeuArgAsnGlyValAsn-548
559-HisArgSerLysSerPheGlyValGluMetAspGlyGluLysGlnThrLeuAla-576
579-ThrAlaLeuGluGlyArgPheGlyIle-587
589-AlaGlyTrpLysGlyHisMet-595
600-GlyTyrGlyLysArgThrAspGlyAspLysGluAlaAlaLeu-613

Hydrophilic Regions - Hopp-Woods

8-SerAsnThrArgSerThrLysIleGlyAspAspAlaAspPheSerPheSerAspLysProLysProGlyThr-31

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38-GlyLysThrAspGlnAsnSerSer-45
 79-LysTyrGlyAlaAspLeuLysGlnAlaVal-88
 96-TyrLysThrArgProGluAlaTrpAlaGluAsnLysLysArgThrGluGluAlaTyr-114
 161-LeuHisValLysIleGluAsnLysSerHisVal-171
 179-ThrLysMetThrLeuLys-184
 186-SerLeuTrpGluProArgArgHisSerAsp-195
 200-GluThrSerAspAsnAlaArgIleArgLeuAsnThrLysAspGluLysLeuThrVal-218
 220-LysAspTyrAlaGly-224
 233-AspValArgGluSerAspGluProAlaLeuThrPheGluAspLysValSerGly-250
 255-ValLeuGluArgArgProGluAsnLeuLysThrLeuAspGlyArgLysLeuIleAla-273
 275-LysThrAlaAspSerGly-280
 312-AlaIleProGluAlaGlu-317
 335-ArgAlaAlaAspArgGlyAspAspValTyrAla-345
 347-AspProSerArgGln-351
 361-ArgSerHisGlnAsnIleArgGly-368
 373-AspGlyTrpArgLys-377
 385-ValPheValArgGlnAsnGluGlySerArg-394
 410-ValAsnGlyLysGlyGlyAlaAlaGly-418
 435-LeuArgAspLysGlnThr-440
 452-ArgPheLysHisArgIleAsnAspGluAsnArgAlaGluArgTyrLysThr-468
 513-PheThrAspSerGluGlyThr-519
 533-AlaGlyIleArgAlaLysThrArgPheAlaLeu-543
 559-HisArgSerLysSerPheGlyValGluMetAspGlyGluLysGlnThrLeuAla-576
 579-ThrAlaLeuGluGly-583
 600-GlyTyrGlyLysArgThrAspGlyAspLysGluAlaAlaLeu-613
992

AMPHI Regions - AMPHI

6-ArgHisLeuLysAsnMetGlnIleLysLysIleMetLysTrp-19
 24-LeuSerLeuLeuGlyAlaLeuGlyTyr-32
 45-AlaValLeuAspValLeuGlyAlaAla-53
 72-HisArgTyrThrGlyThrValSerLysValTyr-82
 158-GlnValGlnAspGly-162
 179-AspPheAlaAspTyr-183

Antigenic Index - Jameson-Wolf

1-MetPheArgArgHisArgHisLeuLys-9
 34-GlyTyrGlySerGluAlaValArg-41
 52-AlaAlaGlyAspAlaGlySerAspAlaProAlaArgArgAlaSerAlaLysSerGlyHisArgTyrThr-75
 79-SerLysValTyrAspGlyAspThr-86
 90-IleAspGlyAspGlyAlaLysHisLysIle-99
 105-AspAlaProGluMetLysGlnAlaTyrGlyThrArgSerArgAspAsnLeuArgAlaAlaGluGlyArgLysValSer-131
 134-ValPheAspThrAspArgTyrGlnArgGluValAla-145
 148-SerValGlyLysThrAspLeuAsn-155
 168-LysSerTyrAlaLysGluGlnGlnAspLysAlaAspPhe-180
 187-GlnIleGlnAlaGluArgGluArgLysGlyLeuTrpLysAlaLysAsnProGlnAlaPro-206
 208-AlaTyrArgArgAlaGlyArgSerGlyGlyGlyAsnLysAspTrpMetAsp-224

Hydrophilic Regions - Hopp-Woods

1-MetPheArgArgHisArgHisLeuLys-9
 54-GlyAspAlaGlySerAspAlaProAlaArgArgAlaSerAlaLysSerGlyHisArg-73
 90-IleAspGlyAspGlyAlaLysHisLysIle-99
 105-AspAlaProGluMetLysGln-111
 113-TyrGlyThrArgSerArgAspAsnLeuArgAlaAlaAlaGluGlyArgLysValSer-131

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134-ValPheAspThrAspArgTyrGlnArgGluValAla-145
 148-SerValGlyLysThrAspLeu-154
 169-SerTyrAlaLysGluGlnGlnAspLysAlaAspPhe-180
 187-GlnIleGlnAlaGluArgGluArgLysGlyLeuTrpLysAlaLysAsnPro-203
 211-ArgAlaGlyArgSerGlyGlyGlyAsnLysAspTrpMet-223

993**AMPHI Regions - AMPHI**

6-GlySerPheGlnGlyProLeuAspLeuLeuLeu-16
 35-ThrGluGlnTyrLeuHisTyrIleAlaGlnIle-45
 105-GlyLeuAspAlaLeuProArgAla-112
 136-IleThrAspLeuThrGlnAlaTrpLeuGly-145
 152-HisThrArgSerHisGluValIle-159
 169-MetThrAlaIleLeuArgArgLeuAsnGlyHisGlyIleCysArgPheHisAspLeuPheAsn-189
 199-ValAsnPheIleAlaLeuLeu-205
 211-GlyLeuValArgIleValGln-217

Antigenic Index - Jameson-Wolf

20-ArgLysGlnAsnIleAsp-25
 70-LeuLeuLeuProArgThrGluThrValGluAspGluGluAlaAspProArgAlaGluLeuValArg-91
 108-AlaLeuProArgAlaGlyArgAspPhe-116
 148-SerArgAlaLysHisThrArgSerHisGluValIleLysGluThrIleSer-164
 172-IleLeuArgArgLeuAsnGlyHisGlyIle-181
 186-AspLeuPheAsnProLysGlnGlyAla-194
 207-LeuAlaLysGluGlyLeu-212
 216-ValGlnGluAspGlyPheGlyGluIleArgIle-226
 228-LeuAsnHisGluGlyAlaHisSerAspGlyIleSerGlyThrArgGlyGlyArgAspValPhe-248

Hydrophilic Regions - Hopp-Woods

20-ArgLysGlnAsnIleAsp-25
 70-LeuLeuLeuProArgThrGluThrValGluAspGluGluAlaAspProArgAlaGluLeuValArg-91
 108-AlaLeuProArgAlaGlyArg-114
 148-SerArgAlaLysHisThrArgSerHisGluValIleLysGluThrIleSer-164
 207-LeuAlaLysGluGlyLeu-212
 216-ValGlnGluAspGlyPheGly-222
 232-GlyAlaHisSerAspGlyIleSerGlyThrArgGlyGlyArgAspValPhe-248

996**AMPHI Regions - AMPHI**

21-LysSerAlaArgThrHisAlaLysIlePro-30
 50-ProGlyGluSerTyrProAlaGlnLeuGlnLysLeuThrGlyTrpAsn-65
 75-ThrSerAlaGlnAlaLeuSerArgLeuProAla-85
 104-LeuArgLysValProLysGlu-110
 115-AsnIleAlaLysIleIleGluThrValGlnLys-125
 140-LeuGlyAlaLeuPheGlyHisLeuSerAsp-149
 167-GlyAlaTrpAlaGlu-171
 186-AsnGlyLysGlyTyrArgLysPheAlaGluAspLeuAsnGlnPheLeuArgLysGlnGlyPhe-206

Antigenic Index - Jameson-Wolf

1-MetAsnArgArgThrPhe-6
 18-CysGlyArgLysSerAlaArgThrHisAlaLysIleProGluGlySerThr-34
 46-TyrGlyAlaAsnProGlyGluSerTyrPro-55
 69-GlyGlyValSerGlyAspThrSerAla-77
 87-LeuAlaArgLysProLys-92
 99-GlyGlyAsnAspPheLeuArgLysValProLysGluGlnThrArgAlaAsnIle-116
 121-GluThrValGlnLysGluAsnIlePro-129
 148-SerAspHisProLeuTyrGluAspLeuSerGluGluTyrGly-161

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173-LeuGlyAspAsnAsnLeuLysSerAspGlnIleHisAlaAsnGlyLysGlyTyrArgLysPheAlaGluAsp
LeuAsnGlnPheLeuArgLysGlnGlyPheArg-207

Hydrophilic Regions - Hopp-Woods

18-CysGlyArgLysSerAlaArgThrHisAlaLysIleProGlu-31
49-AsnProGlyGluSerTyr-54
71-ValSerGlyAspThrSerAla-77
87-LeuAlaArgLysProLys-92
102-AspPheLeuArgLysValProLysGluGlnThrArgAlaAsnIle-116
121-GluThrValGlnLysGluAsnIle-128
154-GluAspLeuSerGluGluTyrGly-161
176-AsnAsnLeuLysSerAspGlnIleHisAlaAsn-186
188-LysGlyTyrArgLysPheAlaGluAspLeuAsnGlnPheLeuArg-202
997

AMPHI Regions - AMPHI

18-TrpAlaGlyLeuSerAlaAlaVal-25
70-TyrArgGlyValLeuArgLeuMetLysThrIleGly-81
107-ProLeuProAlaProLeuHisIle-114
132-LeuLeuAlaAspMetSerAspLeuGlnLysSerAlaArgLeuGly-146
164-AlaAlaValMetGlnPheTrpGlnProLeuValTrpGly-176
189-ValLeuCysAsnValLeuSerAsp-196
222-AlaLeuAlaAspLeuGlnArg-228
241-ArgLeuAsnThrLeuPro-246
275-GluGlyThrProGluHisValGlnThrAla-284
300-TyrAlaGluProValArgLeuProAlaProLeuThrGlyLeuAlaAspGly-316
355-LysAlaHisAlaAspLeuLysArgIleLeuProHisLeu-367
369-GluProGluAlaVal-373

Antigenic Index - Jameson-Wolf

3-AsnThrProHisProArgProLysIle-11
37-GluAlaGlyArgGlnAlaGlyGlyArgAlaArgThrLeuAlaGlyAsnThrAspGlyPheGly-57
78-LysThrIleGlySerAspProArgAlaAla-87
122-ArgArgAlaProThr-126
132-LeuLeuAlaAspMetSerAspLeuGlnLysSerAlaArgLeuGlyGlnProAspThrThr-151
156-LeuLysGlnArgAsnValProArg-163
180-ThrProLeuGluThrAlaSer-186
197-GlyValLeuThrLysLysSerGlySerAspTyrLeuLeuProLysGlnAspLeu-214
225-AspLeuGlnArgLeuGlyAlaAspIleArgLeuGluThrArgValCysArg-241
243-AsnThrLeuProAspGlyLysVal-250
273-LeuProGluGlyThrProGluHisVal-281
312-GlyLeuAlaAspGlyThr-317
323-CysArgGlyArgLeuGlyLeuProGluAsnGluVal-334
340-ValSerAspArgValGlyAla-346
351-AlaTrpAlaAspLysAlaHisAlaAspLeuLysArgIleLeu-364
367-LeuGlyGluProGluAlaValArgValIleThrGluLysArgAlaThrThrAlaAlaAspAlaProProPro
AspLeu-392
402-ProAlaGlyAspTyrLeuHisProAspTyrProAla-413

Hydrophilic Regions - Hopp-Woods

5-ProHisProArgProLysIle-11
37-GluAlaGlyArgGlnAlaGlyGlyArgAlaArgThrLeuAlaGlyAsn-52
80-IleGlySerAspProArgAlaAla-87
122-ArgArgAlaProThr-126
132-LeuLeuAlaAspMetSerAspLeuGlnLysSerAlaArgLeuGlyGlnProAspThrThr-151
198-ValLeuThrLysLysSerGlySer-205

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208-LeuLeuProLysGlnAspLeu-214
 225-AspLeuGlnArgLeuGlyAlaAspIleArgLeuGluThrArgValCysArg-241
 246-ProAspGlyLysVal-250
 276-GlyThrProGluHisVal-281
 325-GlyArgLeuGlyLeuProGluAsnGluVal-334
 340-ValSerAspArgValGly-345
 351-AlaTrpAlaAspLysAlaHisAlaAspLeuLysArgIleLeu-364
 368-GlyGluProGluAlaValArgValIleThrGluLysArgAlaThrThrAlaAlaAspAlaProProPro-390

999**AMPHI Regions - AMPHI**

6-LeuIleSerAlaIleCysValSerIle-14
 30-GluProValGlnSerIleGlnAlaAla-38
 117-GlyGlnAsnLeuValAsnAsnAlaIleAsnGlyLeuHisSerIleGlnAlaValLeuSer-136
 138-ThrThrThrAspLys-142
 151-GlnLeuPheThrAlaLeuThrGluValValLysGluSer-163

Antigenic Index - Jameson-Wolf

1-MetAsnMetLysLysLeuIle-7
 18-AlaCysAsnGlnGlnSerLysThrAlaGlnAlaGluGluProValGln-33
 42-AlaProMetAspIleThrVal-48
 57-GlnAlaPheLysThrGlnAsnValSer-65
 67-LysIleHisAsnLysAsnIleValLysThrAspCysGlyTyr-80
 94-LysLeuAspGluGlnGlnLysIleArgAla-103
 111-LysThrAspGlyGluLysGlyGlnAsnLeu-120
 138-ThrThrThrAspLysLeuGlyGluSerGluAlaGlyLys-150
 158-GluValValLysGluSerAsnGlnThrGly-167
 169-ThrAlaGlnLysAspValProAlaAspGly-178
 185-PheGluLysGluThrAsnThr-191
 195-IleGlyArgLysGlnPro-200

Hydrophilic Regions - Hopp-Woods

1-MetAsnMetLysLysLeuIle-7
 21-GlnGlnSerLysThrAlaGlnAlaGluGluProValGln-33
 72-AsnIleValLysThrAspCysGlyTyr-80
 94-LysLeuAspGluGlnGlnLysIleArgAla-103
 112-ThrAspGlyGluLysGlyGlnAsn-119
 139-ThrThrAspLysLeuGlyGluSerGluAlaGlyLys-150
 158-GluValValLysGluSerAsnGln-165
 169-ThrAlaGlnLysAspValProAla-176
 185-PheGluLysGluThrAsn-190
 195-IleGlyArgLysGlnPro-200

a001**AMPHI Regions - AMPHI**

7-AlaAlaArgArgMet-11
 69-PhePheGlySerAlaCysAsnSerAlaAla-78

Antigenic Index - Jameson-Wolf

3-ProGlnGlyLysAlaAlaArgArgMetSerAlaAsnGluValCys-17
 31-ThrLeuProLysArgAspThrLeuAsnGlySerGlyThr-43
 53-ProArgSerLeuArgSerLysSerThr-61
 68-ArgPhePheGlySerAlaCysAsnSerAlaAlaArgArgSerSerCysProSerProLysIleGly-89
 100-ValProSerGluProIleLeuArgLysSerSerGlyGluLysHisSerVal-116
 118-AlaAspCysProCysAlaSerGlyArgTrpAspLysThrAla-131

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Hydrophilic Regions - Hopp-Woods

5-GlyLysAlaAlaArgArgMetSerAla-13
 32-LeuProLysArgAspThrLeuAsn-39
 54-ArgSerLeuArgSerLysSer-60
 76-SerAlaAlaArgArgSerSerCysProSerProLys-87
 104-ProIleLeuArgLysSerSerGlyGluLysHisSerVal-116
 125-GlyArgTrpAspLysThrAla-131

a003**AMPHI Regions - AMPHI**

72-AsnGlnValValLeu-76
 82-IleValGluValPheGlnArg-88
 138-ArgIleAsnAspAlaGluGluIleLeuGlnAspValValAlaGluPheValGlyIleValGlyHisPheAsp
 GlyPheGlyVal-165
 174-PheIleAlaArgIlePheArgVal-181

Antigenic Index - Jameson-Wolf

91-PheAsnAsnGluGlyGln-96
 104-PheGluGlyGlyGlyAspAspGlyPhe-112
 137-GlyArgIleAsnAspAlaGluGluIleLeu-146
 204-ProGluAlaAlaAlaGlyGluValAspGlyAlaArgValHisAsp-218

Hydrophilic Regions - Hopp-Woods

106-GlyGlyGlyAspAspGlyPhe-112
 137-GlyArgIleAsnAspAlaGluGluIleLeu-146
 205-GluAlaAlaAlaGlyGluValAspGlyAlaArgValHisAsp-218

a005**AMPHI Regions - AMPHI**

14-IleGlnSerMetTrpLysGlu-20
 30-LeuGluLeuLeuThrValPheGlyAlaIleAla-40
 60-LeuThrAspPheSerGluAsnTyr-67
 105-ArgLeuLysGluGlyGlyGluLysSerSerGlu-115
 175-GlnLeuArgArgLeuArg-180
 214-AlaIleValGlySerValGlyValValAlaGluValProAsnIleHisArgLeuLeuLysLys-234
 247-PheLysArgThrVal-251
 272-ThrHisGlnLeuPheLysGln-278
 306-LeuAsnLeuIleAspGluIleSerThr-314
 318-LeuLeuLeuLysAlaPhe-323

Antigenic Index - Jameson-Wolf

8-MetProGluGlnGluGluIleGlnSerMetTrp-18
 48-GlnSerLysLysGlnSerGluSerGlySer-57
 62-AspPheSerGluAsnTyrLysLysGlnArgGlnSerPhe-74
 80-SerGlyGluGluAlaLysHisGlnGluLysGluGluLysLysLysGluLysAlaGluAlaLysAlaGluLysLysArgLeuLysGluGlyGlyGluLysSerSerGluThrGlnLysSerArg-120
 136-GluSerLeuArgHisGluIle-142
 149-AlaLysProGluAspGluValLeuLeu-157
 159-LeuGluSerProGlyGlyVal-165
 175-GlnLeuArgArgLeuArgGluArgAsnIle-184
 189-AlaValAspLysValAlaAla-195
 230-ArgLeuLeuLysLysHisAspIleAspVal-239
 245-GlyGluPheLysArgThr-250
 256-GluAsnThrGluLysGlyLysGlnLysPheArgGlnGluLeuGluGluThrHisGln-274
 279-PheValSerGluAsnArgProGlnLeuAspIleGluGluValAlaThr-294
 310-AspGluIleSerThrSerAspAspLeuLeu-319

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323-PheGluAsnLysGlnValIle-329
 332-LysTyrGlnGluLysGlnSerLeu-339
 349-AlaSerValGluLysLeuPhe-355
 359-ValAsnArgArgAlaAspVal-365

Hydrophilic Regions - Hopp-Woods

8-MetProGluGlnGluGluIleGlnSerMetTrp-18
 48-GlnSerLysLysGlnSerGluSerGly-56
 62-AspPheSerGluAsnTyrLysLysGlnArgGlnSerPhe-74
 81-GlyGluGluAlaLysHisGlnGluLysGluGluLysLysLysGluLysAlaGluAlaLysAlaGluLysLysA
 rgLeuLysGluGlyGlyGluLysSerSerGluThrGlnLysSerArg-120
 136-GluSerLeuArgHisGluIle-142
 149-AlaLysProGluAspGluValLeuLeu-157
 159-LeuGluSerProGly-163
 175-GlnLeuArgArgLeuArgGluArgAsnIle-184
 189-AlaValAspLysValAlaAla-195
 230-ArgLeuLeuLysLysHisAspIleAspVal-239
 245-GlyGluPheLysArg-249
 256-GluAsnThrGluLysGlyLysGlnLysPheArgGlnGluLeuGluGluThrHisGln-274
 279-PheValSerGluAsnArgProGlnLeuAspIleGluGluValAlaThr-294
 310-AspGluIleSerThrSerAspAspLeuLeu-319
 323-PheGluAsnLysGlnValIle-329
 332-LysTyrGlnGluLysGlnSerLeu-339
 349-AlaSerValGluLysLeuPhe-355
 359-ValAsnArgArgAlaAspVal-365

a006-1**AMPHI Regions - AMPHI**

40-GlnAlaTrpGlnAlaLeuLeuTyrAlaLeuValValLeu-52
 61-ArgArgIleAlaAspThrArgThrPheThrArgIleTyrThrGlu-75
 103-GluPheValSerPhePheGlu-109
 117-ThrSerValValSerIlePheGlyAlaCysIleMetLeuLeu-130
 179-GlyAspGluArgGlnLeu-184
 186-ArgHisTyrGlyLeuLeuAlaArgLeu-194
 228-GlyTyrSerSerAlaGlyHisValTyrSer-237
 249-LeuAspAspValProArgLeuValGluGlnTyrSerAsnLeuLysAspIle-265

Antigenic Index - Jameson-Wolf

1-SerGlnAsnHisArgLysArgLeu-8
 59-AlaAlaArgArgIleAlaAspThrArgThrPheThr-70
 82-LeuGluGlnArgGlnArgGlnValProHisSer-92
 163-PheArgLeuLysAsnSerLeuGluArgAspAsnHisPheIleArgLysGlyAspGluArgGlnLeuAspArg
 HisTyr-188
 198-IleSerAsnArgGluAlaPhe-204
 227-LysGlyTyrSerSer-231
 249-LeuAspAspValProArgLeuValGluGlnTyrSerAsnLeuLysAspIleGlyGln-267
 269-IleGluTrpSerLysArgAsnIleLysAlaGlyThr-280

Hydrophilic Regions - Hopp-Woods

1-SerGlnAsnHisArgLysArgLeu-8
 59-AlaAlaArgArgIleAlaAspThrArgThrPhe-69
 82-LeuGluGlnArgGlnArgGlnValPro-90
 166-LysAsnSerLeuGluArgAspAsnHisPheIleArgLysGlyAspGluArgGlnLeuAspArg-186
 198-IleSerAsnArgGluAla-203
 249-LeuAspAspValProArgLeuValGlu-257
 260-SerAsnLeuLysAspIleGlyGln-267

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269-IleGluTrpSerLysArgAsnIleLysAlaGlyThr-280

a007-1**AMPHI Regions - AMPHI**

71-HisSerMetValLysGlyIleAsn-78

105-ValAlaThrTyrIleMetAsnAlaPheAspAsnGlyGlyGly-118

Antigenic Index - Jameson-Wolf

1-MetAsnThrThrArgLeu-6

20-SerAlaAlaAspAsnSerIleMetThrLysGlyGlnLysValTyrGluSerAsnCys-38

41-CysHisGlyLysLysGlyGluGlyArgGlyThr-51

55-ProLeuTyrArgSerAspPheIleMetLysLysProGln-67

83-ValAsnGlyLysThrTyrAsnGly-90

98-SerAspAlaAspIle-102

112-AlaPheAspAsnGlyGlyGlySerValThrGluLysAspValLysGlnAlaLysAsnLysLys-132

Hydrophilic Regions - Hopp-Woods

26-IleMetThrLysGlyGlnLysValTyrGlu-35

42-HisGlyLysLysGlyGluGlyArgGly-50

61-PheIleMetLysLysProGln-67

98-SerAspAlaAspIle-102

119-SerValThrGluLysAspValLysGlnAlaLysAsnLysLys-132

a008**AMPHI Regions - AMPHI**

15-LeuGluAsnProAlaGlnGlnValArgAlaAlaLeuAspThrLeuSer-30

54-GlnProAspPheValAsnAlaVal-61

69-AspGlyIleAlaLeuLeuAlaGluLeuAsnArg-79

90-PheArgAsnAlaPro-94

129-ArgProLeuAlaGluIleLeuProAsp-137

144-GlyLysValAlaGluLeuSerLysArgLeuGly-154

Antigenic Index - Jameson-Wolf

1-MetAsnAsnArgHis-5

12-GlySerAsnLeuGluAsnProAlaGlnGlnVal-22

29-LeuSerSerHisProAspIleArgLeuLysGlnAlaSerSer-42

49-ValGlyTyrAspAsnGlnProAspPhe-57

76-GluLeuAsnArgIleGluAlaAspPheGlyArgGluArgSerPheArgAsnAlaProArgThrLeuAspLeuAspIleIleAspPheAspGlyIleSerSerAspAspProArgLeuThrLeuProHisProArgAlaHisGluArgSerPheVal-127

140-LeuGlyLysHisGlyLysValAlaGluLeuSerLysArgLeuGlyAsnGlnGlyIle-158

160-LeuLeuProAspLys-164

Hydrophilic Regions - Hopp-Woods

14-AsnLeuGluAsnProAlaGlnGlnVal-22

33-ProAspIleArgLeuLysGln-39

76-GluLeuAsnArgIleGluAlaAspPheGlyArgGluArgSerPheArgAsnAlaProArgThrLeuAsp-98

105-AspGlyIleSerSerAspAspProArgLeu-114

120-ArgAlaHisGluArgSerPheVal-127

142-LysHisGlyLysValAlaGluLeuSerLysArgLeuGly-154

160-LeuLeuProAspLys-164

a009**Antigenic Index - Jameson-Wolf**

6-ValAlaPheGluArgHisHisHisLysSerLysAlaGluGlnAsnThrHisArgArgAlaAspAlaGluIleAlaGlu-31

37-AsnGlnHisThrGlnAlaArgLysGlnSer-46

57-PheSerAspLysVal-61

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77-AlaAspGlyGlyLysThrTrpGlnLysPro-86

Hydrophilic Regions - Hopp-Woods

6-ValAlaPheGluArgHisHisHisLysSerLysAlaGluGlnAsnThrHisArgArgAlaAspAlaGluIleAlaGlu-31

40-ThrGlnAlaArgLysGlnSer-46

78-AspGlyGlyLysThrTrpGln-84

a010-1**AMPHI Regions** - AMPHI

54-SerAlaSerLeuGly-58

70-TyrAspThrValLysGly-75

115-TyrGlnArgProPheGlyGlyHis-122

125-GluHisGlyLysArgAlaVal-131

146-LeuHisThrLeuTyrGln-151

210-AlaSerSerThrAsn-214

216-TyrMetAsnThrGlyAspGly-222

275-ArgTyrAlaProThrValLys-281

322-IleMetGluLysLeuProGlyIleArg-330

338-GlyIleAspProIleLysAspProIlePro-347

357-GlyGlyIleProThrAsnTyrHis-364

413-AlaAlaGlyAspSerMetIleLysPheIleLysGluGlnSerAspTrp-428

446-LeuAspAsnGlnThrAsp-451

453-GluAsnValAspAlaLeuArgArgGluLeu-462

479-LeuSerLysGlyValArgGluValMetAlaIleAlaGlu-491

505-TrpAsnThrAlaArg-509

514-GluLeuAspAsnLeuIleGluValAlaLys-523

Antigenic Index - Jameson-Wolf

14-GlyGlyGlyGlyAlaGlyLeu-20

26-LeuSerLysSerGlyLeu-31

40-PheProThrArgSerHisThr-46

59-AsnValGlnGluAspArgTrpAsp-66

71-AspThrValLysGlySerAspTrpLeuGlyAspGlnAspAlaIle-85

104-MetProPheAspArgValGluSerGlyLysIleTyrGlnArgProPheGly-120

123-ThrAlaGluHisGlyLysArgAlaValGluArgAlaCysAlaValAlaAspArgThrGly-142

152-GlnAsnValArgAlaAsnThrGln-159

168-AspLeuIleArgAspGluAsnGlyAspVal-177

183-MetGluMetGluThrGlyGlu-189

202-ThrGlyGlyGlyGlyArgIle-208

211-SerSerThrAsnAla-215

218-AsnThrGlyAspGlyLeu-223

231-IleProLeuGluAspMetGlu-237

255-GluGlyValArgGlyGluGlyGlyIle-263

266-AsnAlaAspGlyGluArgPheMetGlu-274

276-TyrAlaProThrValLysAspLeuAlaSerArgAspValValSer-290

297-IleTyrGluGlyArgGlyCysGlyLysAsnLysAspHisVal-310

315-AspHisIleGlyAlaGluLysIleMetGluLysLeuProGlyIleArgGluIleSer-333

338-GlyIleAspProIleLysAspProIle-346

368-ValValProGlnGlyAspGluTyrGluValProVal-379

395-GlyAlaAsnArgLeuGlyThrAsnSerLeu-404

413-AlaAlaGlyAspSerMet-418

421-PheIleLysGluGlnSerAspTrpLysProLeuProAlaAsnAlaGlyGluLeuThrArgGlnArgIleGluArgLeuAspAsnGlnThrAspGlyGluAsnValAspAlaLeuArgArgGluLeuGlnArgSer-465

473-PheArgThrAspGluIleLeuSerLysGlyValArgGlu-485

487-MetAlaIleAlaGluArgValLysArgThrGluIleLysAspLysSerLysVal-504

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508-AlaArgIleGluAlaLeuGluLeu-515
 529-AlaGluAlaArgLysGluSerArgGlyAlaHisAlaSerAspAspHisProGluArgAspAspGluAsnTrp
 Met-553
 558-TyrHisSerAspAlaAsnThrLeuSerTyrLysProValHisThrLysProLeuSer-576
 581-LysProAlaLysArgValTyr-587

Hydrophilic Regions - Hopp-Woods

26-LeuSerLysSerGlyLeu-31
 59-AsnValGlnGluAspArgTrpAsp-66
 71-AspThrValLysGly-75
 77-AspTrpLeuGlyAspGlnAspAlaIle-85
 105-ProPheAspArgValGluSerGlyLysIleTyr-115
 123-ThrAlaGluHisGlyLysArgAlaValGluArgAlaCysAlaValAlaAspArgThrGly-142
 168-AspLeuIleArgAspGluAsnGlyAsp-176
 183-MetGluMetGluThrGlyGlu-189
 231-IleProLeuGluAspMetGlu-237
 255-GluGlyValArgGlyGluGly-261
 267-AlaAspGlyGluArgPheMetGlu-274
 276-TyrAlaProThrValLysAspLeuAlaSerArgAspValValSer-290
 297-IleTyrGluGlyArgGlyCysGlyLysAsnLysAspHisVal-310
 315-AspHisIleGlyAlaGluLysIleMetGluLysLeuProGlyIleArgGluIleSer-333
 340-AspProIleLysAspProIle-346
 371-GlnGlyAspGluTyrGluValProVal-379
 421-PheIleLysGluGlnSerAspTrpLysPro-430
 434-AsnAlaGlyGluLeuThrArgGlnArgIleGluArgLeuAspAsnGlnThrAspGlyGluAsnValAspAla
 LeuArgArgGluLeuGlnArg-464
 473-PheArgThrAspGluIleLeuSerLysGlyValArgGlu-485
 487-MetAlaIleAlaGluArgValLysArgThrGluIleLysAspLysSerLysVal-504
 508-AlaArgIleGluAlaLeuGluLeu-515
 529-AlaGluAlaArgLysGluSerArgGlyAlaHisAlaSerAspAspHisProGluArgAspAspGluAsnTrp
 Met-553
 581-LysProAlaLysArgValTyr-587

a011**AMPHI Regions - AMPHI**

58-IleArgLeuIleAsnAlaAla-64
 83-AlaIleLeuThrLys-87
 116-GluValLeuHisArgTyrLeuProGlnMetLeuSerAlaGly-129
 147-MetAlaXxxMetGlyLysValMetGlyVal-156

Antigenic Index - Jameson-Wolf

1-MetArgThrHisArgLysThrCysSer-9
 17-ThrAlaSerLysProAlaValSerIleArgHisProSerGluAsnIleMet-33
 37-IleArgLeuThrGluAspMetLysThrAlaMetArgAlaLysAspGlnVal-53
 66-LysGlnPheGluValAspGluArgThrGluAlaAspAspAlaLysIle-81
 88-MetValLysGlnArgLysAspSerValLysIle-98
 100-ThrGluAlaGlyArgGlnAspLeuAlaAspLysGluAsnAlaGluIle-115
 127-SerAlaGlyGluIleArgThrAlaVal-135
 157-XxxLysThrArgLeuAlaGlyLysAlaAspMetGlyGluValAsnLysIleLeu-174

Hydrophilic Regions - Hopp-Woods

1-MetArgThrHisArgLysThrCys-8
 37-IleArgLeuThrGluAspMetLysThrAlaMetArgAlaLysAspGlnVal-53
 66-LysGlnPheGluValAspGluArgThrGluAlaAspAspAlaLysIle-81
 88-MetValLysGlnArgLysAspSerValLysIle-98
 100-ThrGluAlaGlyArgGlnAspLeuAlaAspLysGluAsnAlaGluIle-115

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129-GlyGluIleArgThrAlaVal-135

157-XxxLysThrArgLeuAlaGlyLysAlaAspMetGlyGluValAsnLysIleLeu-174

a012-1**AMPHI Regions** - AMPHI

19-LysLeuLeuGluGlnLeuMetArgPheLeuGlnPheLeuSerGluPheLeuPheAlaLeuPheArgIle-41

48-ArgAlaLeuLysPheAlaArgArg-55

89-AsnAsnPheIleArgHisThr-95

160-GlnGlyPheTyrGlyVal-165

179-GlyPheLeuArgPheGlyArgPheLeuProThrLeuLeuGlnThrLeu-194

Antigenic Index - Jameson-Wolf

42-PheThrHisLysSerAsnArgAlaLeuLysPheAlaArgArgHisHis-57

72-ArgTyrPheArgTyrAsnThrHisArgThrAspAsnArgLysArgSerGlyAsnAsnPhe-91

93-ArgHisThrArgHisHis-98

101-ThrAlaArgArgHisLeuIleAspGlyAspGlyGlnArgAsn-114

119-GlnThrProLysLeuArgSerArgGln-127

137-ThrPheGlnSerLysGlnAsnLeu-144

147-ArgLeuGlyAsnGlnLysHisArgArgAsnLeuMetThrGln-160

173-IleGlnHisLysLysAlaGly-179

Hydrophilic Regions - Hopp-Woods

45-LysSerAsnArgAlaLeuLysPheAlaArgArgHisHis-57

77-AsnThrHisArgThrAspAsnArgLysArgSerGly-88

101-ThrAlaArgArgHisLeuIleAspGlyAspGlyGlnArg-113

121-ProLysLeuArgSerArgGln-127

149-GlyAsnGlnLysHisArgArgAsnLeu-157

173-IleGlnHisLysLysAlaGly-179

a015**AMPHI Regions** - AMPHI

25-ValPheXxxLeuTrpLysAsnProGluLysProLeuAlaGlyPheTrpLysAlaLeuProHis-45

107-MetCysCysLeuThrCys-112

Antigenic Index - Jameson-Wolf

29-TrpLysAsnProGluLysProLeu-36

90-MetArgAlaArgProArgSerThrLys-98

Hydrophilic Regions - Hopp-Woods

30-LysAsnProGluLysProLeu-36

90-MetArgAlaArgProArgSerThrLys-98

a018-2**AMPHI Regions** - AMPHI

6-IleGlnHisLeuArg-10

100-AspGlyAlaAlaAla-104

152-ArgIleGlyAsnGlyTyr-157

Antigenic Index - Jameson-Wolf

1-MetValGluArgHisIleGln-7

9-LeuArgAsnGlyHis-13

19-ProSerGlnGlnValArg-24

27-PheGlyGlyArgThrTyrAspPheCysAlaAspGluAlaAla-40

67-TyrPheAlaAspAspLysPhe-73

78-LeuArgGlyAsnLeuArg-83

85-PheGlnThrAspLysAlaAspLeuArgThrGlyGluHisTyrAlaAspGlyAlaAla-103

108-AlaAspIleArgVal-112

136-ArgValAlaArgAsnLysAspMetArgAsnThrGlyLeuHisSerGlnArgIleGlyAsnGlyTyr-157

Hydrophilic Regions - Hopp-Woods

1-MetValGluArgHisIleGln-7
 35-CysAlaAspGluAlaAla-40
 67-TyrPheAlaAspAspLysPhe-73
 85-PheGlnThrAspLysAlaAspLeuArgThrGlyGluHisTyrAla-99
 108-AlaAspIleArgVal-112
 136-ArgValAlaArgAsnLysAspMetArgAsn-145

a019-2**AMPHI Regions - AMPHI**

33-ProAlaAspAsnIleGlu-38
 55-GlyLysThrLeuAlaAspTyrGlyGlyTyrProSerAlaLeuAspAla-70
 80-AlaAlaTyrLeuGluAsnAlaGlyAsp-88
 90-AlaMetAlaGluAsnValArgAsnGluTrpLeuLysSer-102
 142-AlaAlaGluLeuValLysAsnThrGlyLysLeuProSerGlyCysThrLysLeuLeuGluGlnAlaAlaAlaSer-166
 173-AspAlaTrpArgArgValArg-179
 193-LeuAlaAlaAlaLeuGlySerProPheAspGlyGlyThrGlnGly-207
 215-AsnValIleGlyLysGluAlaArgLysSer-224
 229-AlaLeuLeuSerGluMet-234
 259-AsnValProAlaAlaLeuAspTyrTyrGly-268
 292-ArgArgTrpAspGluLeuAlaSerValIleSerHisMetProGluLysLeuGlnLys-310
 329-GlnGluAlaGluLysLeuTyrLysGlnAla-338
 451-ArgTyrIleSerPro-455
 495-GlnGlyLeuMetGlnValMet-501
 582-ArgAspTyrValLysLysValMet-589

Antigenic Index - Jameson-Wolf

3-ProProSerLeuLys-7
 22-SerSerThrAsnThrLeuSerAlaAspLysThrProAlaAspAsnIleGluThrAlaAspLeuSerAlaSerValProThrArgProAlaGluProGluGlyLysThrLeuAlaAspTyrGlyGlyTyrProSerAla-67
 69-AspAlaValLysGlnLysAsnAspAla-77
 85-AsnAlaGlyAspSerAlaMet-91
 103-LeuGlyAlaArgArgGln-108
 115-GluTyrAlaLysLeuGluProAlaGlyArgAlaGlnGluValGluCysTyrAlaAspSerSerArgAsnAspTyrThrArgAlaAlaGluLeuValLysAsnThrGlyLysLeuProSerGlyCys-156
 167-GlyLeuLeuAspGlyAsnAspAlaTrpArgArgValArgGly-180
 182-LeuAlaGlyArgGlnThrThrAspAlaArgAsn-192
 199-SerProPheAspGlyGlyThrGlnGlySerArgGluTyr-211
 217-IleGlyLysGluAlaArgLysSerProAsn-226
 232-SerGluMetGluSerGlyLeuSerLeuGluGlnArgSer-244
 254-GlnSerGlnAsnLeu-258
 266-TyrTyrGlyLysValAlaAspArgArgGlnLeuThrAspAspGlnIle-281
 287-AlaAlaLeuArgAlaArgArgTrpAspGlu-296
 304-MetProGluLysLeuGlnLysSerProThr-313
 320-ArgSerArgAlaAlaThrGlyAsnThrGlnGluAlaGluLysLeuTyrLys-336
 339-AlaAlaThrGlyArgAsn-344
 350-AlaGlyGluGluLeuGlyArgLysIleAspThrArgAsnAsnValProAspAlaGlyLysAsnSerVal-372
 374-ArgMetAlaGluAspGlyAlaIleLys-382
 389-ArgAsnSerArgThrAlaGlyAspAlaLysMetArgArgGlnAlaGlnAla-405
 409-PheAlaThrArgGlyPheAspGluAspLysLeuLeu-420
 438-SerAlaGluArgThrAspArgLysLeuAsnTyr-448
 454-SerProPheLysAspThrValIle-461
 464-AlaGlnAsnValAsnValAspProAla-472

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478-IleArgGlnGluSerArgPhe-484
 488-AlaGlnSerArgValGlyAla-494
 504-ThrAlaArgGluIleAlaGly-510
 520-TyrThrAlaAspGlyAsnIleArgMetGly-529
 535-AspThrLysArgArgLeuGlnAsnAsnGluVal-545
 550-GlyTyrAsnAlaGlyProGlyArgAlaArgArgTrpGlnAlaAspThrProLeuGlu-568
 579-SerGluThrArgAspTyrValLys-586
 606-LeuLysGlnArgMet-610

Hydrophilic Regions - Hopp-Woods

27-LeuSerAlaAspLysThrProAlaAspAsnIleGluThrAlaAspLeu-42
 46-ValProThrArgProAlaGluProGluGlyLysThrLeuAla-59
 69-AspAlaValLysGlnLysAsnAspAla-77
 85-AsnAlaGlyAspSerAlaMet-91
 103-LeuGlyAlaArgArgGln-108
 115-GluTyrAlaLysLeuGluProAlaGlyArgAlaGlnGluValGluCysTyrAlaAspSerSerArgAsnAsp
 TyrThrArgAlaAlaGluLeuValLysAsnThrGlyLysLeuProSerGlyCys-156
 170-AspGlyAsnAspAlaTrpArgArgValArgGly-180
 185-ArgGlnThrThrAspAlaArgAsn-192
 201-PheAspGlyGlyThrGlnGlySerArgGlu-210
 217-IleGlyLysGluAlaArgLysSerProAsn-226
 232-SerGluMetGluSer-236
 238-LeuSerLeuGluGlnArgSer-244
 270-ValAlaAspArgArgGlnLeuThrAspAspGlnIle-281
 287-AlaAlaLeuArgAlaArgArgTrpAspGlu-296
 304-MetProGluLysLeuGlnLys-310
 320-ArgSerArgAlaAlaThr-325
 327-AsnThrGlnGluAlaGluLysLeuTyrLys-336
 350-AlaGlyGluGluLeuGlyArgLysIleAspThrArgAsnAsnValProAspAlaGlyLys-369
 374-ArgMetAlaGluAspGlyAlaIleLys-382
 389-ArgAsnSerArgThrAlaGlyAspAlaLysMetArgArgGlnAlaGlnAla-405
 411-ThrArgGlyPheAspGluAspLysLeuLeu-420
 438-SerAlaGluArgThrAspArgLysLeu-446
 478-IleArgGlnGluSerArgPhe-484
 488-AlaGlnSerArgValGly-493
 504-ThrAlaArgGluIleAlaGly-510
 535-AspThrLysArgArgLeuGlnAsn-542
 554-GlyProGlyArgAlaArgArgTrpGlnAla-563
 579-SerGluThrArgAspTyrValLys-586
 606-LeuLysGlnArgMet-610

a023**AMPHI Regions - AMPHI**

42-LysGluTyrSerAlaTrpGlnAlaPhePheSerGlnThrTrpValLysValPheThrGlnValSerPheIleA
 laValPheLeuHisAlaTrpValGly-74
 82-TyrXxxLysProPhe-86

Antigenic Index - Jameson-Wolf

1-MetValGluArgLysLeuThr-7
 41-ProLysGluTyrSer-45
 81-AspTyrXxxLysProPheGlyVal-88

Hydrophilic Regions - Hopp-Woods

1-MetValGluArgLysLeuThr-7

a025**AMPHI Regions - AMPHI**

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15-AlaAlaGlnLeuGlyGlyCysProThrGlnHis-25
36-MetGlnThrValProSerAlaProValTyrAsnProTyrGlyAlaThrProTyr-53
111-AspThrValTyrLysIleSerLysCysTyrHisIle-122

126-AspPheArgAlaTrpAsnGlyMetThrAsp-135
140-IleGlyGlnIleValLysVal-146
206-AspPheArgAlaTrpAsnGlyMetThrAsp-215
220-IleGlyGlnIleValLysVal-226
248-AlaValGlnThrProValLysProAlaAla-257

261-ValGlnSerAlaProGlnPro-267
290-SerGlyThrArgSer-294
307-LysValValAlaAspPhe-312
343-GlyLeuArgGlyTyrGlyAsn-349

Antigenic Index - Jameson-Wolf

22-ProThrGlnHisPro-26
33-AsnSerGlyMetGlnThr-38

58-AlaAlaAsnAspAlaPro-63

108-ValArgGlyAspThrValTyrLysIleSerLys-118

120-TyrHisIleSerGlnAspAspPheArgAla-129

131-AsnGlyMetThrAspAsnThrLeu-138

144-ValLysValLysProAlaGly-150
157-AlaAlaValLysSerArgProAla-164
188-ValArgGlyAspThr-192
195-AsnIleSerLysArgTyrHisIleSerGlnAspAspPheArgAla-209

211-AsnGlyMetThrAspAsnThrLeu-218

224-ValLysValLysProAlaGly-230
237-AlaAlaValLysSerArgProAla-244

252-ProValLysProAlaAlaGlnProProValGlnSerAlaProGlnPro-267
270-ProAlaAlaGluAsnLysAlaVal-277
280-ProAlaProGlnSerProAlaAlaSerProSerGlyThrArgSerValGly-296

302-ArgProThrGlnGlyLysValValAlaAspPheGlyGlyAsnAsnLysGlyValAsp-320
333-AlaAspGlyLysVal-337
342-SerGlyLeuArgGlyTyrGly-348

363-TyrGlyHisAsnGln-367
370-LeuValGlyGluGlyGlnGlnValLysArgGlyGlnGln-382
387-GlyAsnThrGluAlaSerArgThrGlnLeu-396

398-PheGluValArgGlnAsnGlyLysProValAsnProAsnSer-411

Hydrophilic Regions - Hopp-Woods

108-ValArgGlyAspThr-112

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123-SerGlnAspAspPheArg-128
144-ValLysValLysPro-148
157-AlaAlaValLysSerArgProAla-164
188-ValArgGlyAspThr-192
200-TyrHisIleSerGlnAspAspPheArg-208
224-ValLysValLysPro-228
237-AlaAlaValLysSerArgProAla-244
253-ValLysProAlaAla-257
270-ProAlaAlaGluAsnLysAlaVal-277
290-SerGlyThrArgSer-294
313-GlyGlyAsnAsnLysGlyValAsp-320
333-AlaAspGlyLysVal-337
373-GluGlyGlnGlnValLysArgGlyGln-381
389-ThrGluAlaSerArgThr-394
400-ValArgGlnAsnGlyLysProValAsn-408

a032**AMPHI Regions - AMPHI**

11-LeuArgArgProLeuArgGln-17
67-SerPheAlaGlyAsnValTyrProArgLeu-76
114-ValHisGlyGlnIleGlnHisProValGlnProPheLeuArg-127
134-LeuGlyLeuLeuArgArgPheAspVal-142

Antigenic Index - Jameson-Wolf

1-MetArgArgAsnVal-5
10-ValLeuArgArgProLeuArg-16
28-ArgAlaValProAlaGlyLysGlnGlyPhe-37
41-CysArgLeuThrGlnArgGln-47
57-AlaGlyGlnArgAsnLeuPro-63
104-ValIleAlaHisArgGlnArgVal-111
138-ArgArgPheAspValGlyGlyArgValGlyMet-148
151-ThrAlaPheAspGlnProGlyAla-158
160-LeuProProArgArgGlnLeuAlaArgGlnArgProArgIleGlnThrAlaLeuArgGlnProProGlnArg
ArgArgLysIleAlaLeu-189
203-HisLeuCysGlnGlnArgLysGln-210
236-ValLysMetArgArgLysProValGlnAsnHisAsnArgProThrGlnIleSerLysLysGln-256

Hydrophilic Regions - Hopp-Woods

1-MetArgArgAsnVal-5
10-ValLeuArgArgProLeuArg-16
28-ArgAlaValProAlaGlyLys-34
41-CysArgLeuThrGln-45
104-ValIleAlaHisArgGlnArgVal-111
138-ArgArgPheAspValGlyGly-144
161-ProProArgArgGlnLeuAlaArgGlnArgProArgIle-173
177-LeuArgGlnProProGlnArgArgArgLysIleAlaLeu-189

-383-

203-HisLeuCysGlnGlnArgLysGln-210

236-ValLysMetArgArgLysProValGlnAsnHisAsnArgProThrGlnIleSerLysLysGln-256

a033-2**AMPHI Regions - AMPHI**

6-GlnTyrGlyGlyLeuAlaGlyPheProLysArgCysGluSerGlu-20

64-GlyGlnAlaPheGluAlaLeuAsnCys-72

95-ValGlyAlaLeuProLysTyrLeuAlaSerAsnValValArgAspMetHisGlyLeuLeuSerThrVal-117

120-GlnThrGlyLysValLeuAspLysIleProGlyAlaMetGlu-133

142-IleLysThrLeuAlaGlu-147

157-SerLeuPheGluAsnPhe-162

168-GlyProValAspGlyHisAsnValGluAsnLeuValAspValLeuGluAspLeuArgGlyArg-188

207-AlaGluAsnAspPro-211

213-LysTyrHisAlaValAlaAsnLeuProLysGluSerAlaAla-226

242-TyrThrGlnValPheGlyLys-248

280-PheProAspArgTyrPheAspVal-287

307-LysProValValAlaIleTyrSer-314

316-PheLeuGlnArgAlaTyrAspGlnLeu-324

357-AspLeuSerPheLeuArgCysIleProAsnMetIleVal-369

390-AlaProAlaAlaValArgTyrProArg-398

407-SerAspGlyMetGluThrValGlu-414

419-IleIleArgArgGlu-423

432-PheGlySerMetValAla-437

453-MetArgPheValLysProIleAspGluGlu-462

469-ArgSerHisAspArgIle-474

489-AlaValLeuGluValLeu-494

510-AspThrValThrGlyHisGly-516

518-ProLysLysLeuLeu-522

Antigenic Index - Jameson-Wolf

11-AlaGlyPheProLysArgCysGluSerGluTyrAspAla-23

28-HisSerSerThrSerIle-33

41-AlaAlaAspLysGlnLeuGlySerAspArgArgSerVal-53

57-GlyAspGlyAlaMetThr-62

72-CysAlaGlyAspMetAspVal-78

85-AsnAspAsnGluMetSerIle-91

105-AsnValValArgAspMetHisGly-112

117-ValLysAlaGlnThrGlyLysValLeuAspLysIleProGly-130

134-PheAlaGlnLysValGluHisLysIleLysThrLeuAlaGluGluAlaGluHisAlaLysGln-154

166-TyrThrGlyProValAspGlyHisAsn-174

181-ValLeuGluAspLeuArgGlyArgLysGlyPro-191

197-IleThrLysLysGlyAsnGlyTyrLysLeuAlaGluAsnAspProValLys-213

220-LeuProLysGluSerAlaAla-226

228-MetProSerGluLysGluProLysProAlaAlaLysProThrTyr-242

253-ArgAlaAlaAlaAspSerArgLeu-260

266-AlaMetArgGluGlySerGlyLeuValGluPheGluGlnArgPheProAspArgTyrPhe-285

345-ValGlyAlaAspGlyProThrHis-352

370-AlaAlaProSerAspGluAsnGluCysArg-379

395-ArgTyrProArgGlyThrGlyThr-402

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406-ValSerAspGlyMetGluThrValGluIleGlyLysGlyIleIleArgArgGluGlyGluLysThrAla-428
 457-LysProIleAspGluGluLeuIle-464
 467-LeuAlaArgSerHisAspArgIleValThrLeuGluGluAsnAlaGluGlnGlyGlyAlaGly-487
 512-ValThrGlyHisGlyAspProLysLysLeuLeuAspAspLeuGlyLeu-527
 530-GluAlaValGluArgArgValArg-537
 540-LeuSerAspArgAspAlaAlaAsn-547

Hydrophilic Regions - Hopp-Woods

13-PheProLysArgCysGluSerGluTyrAsp-22
 41-AlaAlaAspLysGlnLeuGlySerAspArgArgSerVal-53
 74-GlyAspMetAspVal-78
 85-AsnAspAsnGluMetSerIle-91
 106-ValValArgAspMetHis-111
 123-LysValLeuAspLysIleProGly-130
 134-PheAlaGlnLysValGluHisLysIleLysThrLeuAlaGluGluAlaGluHisAlaLysGln-154
 181-ValLeuGluAspLeuArgGlyArgLysGlyPro-191
 197-IleThrLysLysGlyAsnGly-203

205-LysLeuAlaGluAsnAspProValLys-213
 220-LeuProLysGluSerAlaAla-226

228-MetProSerGluLysGluProLysProAlaAla-238 .
 253-ArgAlaAlaAlaAspSerArgLeu-260
 266-AlaMetArgGluGlySerGly-272

274-ValGluPheGluGlnArgPheProAspArgTyrPhe-285
 372-ProSerAspGluAsnGluCys-378
 408-AspGlyMetGluThrValGluIleGlyLysGlyIleIleArgArgGluGlyGluLysThrAla-428
 457-LysProIleAspGluGluLeuIle-464
 467-LeuAlaArgSerHisAspArgIleValThrLeuGluGluAsnAlaGluGlnGlyGly-485
 513-ThrGlyHisGlyAspProLysLysLeuLeuAsp-523

530-GluAlaValGluArgArgValArg-537
 540-LeuSerAspArgAspAlaAlaAsn-547

a034**AMPHI Regions - AMPHI**

35-LeuAspHisAlaAla-39
 52-AsnLeuGluGlnMetArgAlaIleMetGluAlaAlaAspGln-65
 94-AlaValGluGluPheProHisIlePro-102
 152-ThrValValAsnPheSer-157
 168-IleGlyValLeuGlyAsnLeuGluThrGly-177
 186-GlyAlaValGlyLysLeuSer-192
 197-LeuThrSerValGluAspAlaValArgPheValLysAspThrGly-211
 226-TyrLysPheThrArgProProThrGly-234
 236-ValLeuArgIleAspArgIleLysGluIleHisGlnAlaLeu-249
 261-SerValProGlnGluTrpLeuLysValIleAsnGluTyrGlyGlyAsnIleGlyGluThrTyrGlyValPro
 ValGluGluIleValGluGlyIleLysHisGly-295
 314-ArgArgTyrLeuAlaGluAsn-320
 330-LeuSerLysThrIleGluAlaMetLys-338
 360-ValSerLeuGluLysMetAlaAsnArgTyrAlaLysGlyGluLeuAsnGlnIleVal-378

Antigenic Index - Jameson-Wolf

20-LeuProLysGluThrGln-25

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37-HisAlaAlaGluAsnSerTyrGly-44
 54-GluGlnMetArgAlaIleMetGluAlaAlaAspGlnVal-66
 75-SerAlaGlyAlaArgLysTyrAla-82
 106-HisGlnAspHisGlyAlaSerProAspValCysGlnArgSerIle-120
 129-MetAspGlySerLeuMetGluAspGlyLysThrProSerSerTyrGluTyr-145
 164-ValGluGlyGluIle-168
 173AsnLeuGluThrGlyGluAlaGlyGluGluAspGlyVal-185
 191-LeuSerHisAspGln-195
 199-SerValGluAspAlaValArgPheValLysAspThrGlyValAsp-213
 221-ThrSerHisGlyAla-225
 227-LysPheThrArgProProThrGlyAspValLeuArgIleAspArgIleLysGluIleHis-246
 258-GlySerSerSerValPro-263
 271-AsnGluTyrGlyGlyAsnIleGlyGlu-279
 287-GluIleValGluGlyIleLysHisGlyValArgLysValAsnIleAspThrAspLeuArgLeuAlaSerThr
 GlyAlaVal-313
 316-TyrLeuAlaGluAsnProSerAspPheAspProArgLysTyrLeuSerLysThrIleGluAlaMetLys-33
 8
 350-CysGluGlyGlnAlaGlyLysIleLysProValSerLeuGluLysMetAlaAsnArgTyrAlaLysGlyGlu
 Leu-374

Hydrophilic Regions - Hopp-Woods

54-GluGlnMetArgAlaIleMetGluAlaAlaAspGlnVal-66
 76-AlaGlyAlaArgLysTyrAla-82
 108-AspHisGlyAlaSerProAspValCysGln-117
 132-SerLeuMetGluAspGlyLysThrProSer-141
 164-ValGluGlyGluIle-168
 175-GluThrGlyGluAlaGlyGluGluAspGlyVal-185
 199-SerValGluAspAlaValArgPheValLysAspThrGlyVal-212
 235-AspValLeuArgIleAspArgIleLysGluIleHis-246
 287-GluIleValGluGlyIleLysHisGlyValArgLysValAsnIleAspThrAspLeuArgLeu-307
 320-AsnProSerAspPheAspProArgLysTyrLeuSerLysThrIleGluAlaMetLys-338
 352-GlyGlnAlaGlyLysIleLysProValSerLeuGluLysMetAlaAsnArgTyrAlaLysGlyGluLeu-37
 4

a036**AMPHI Regions - AMPHI**

6-AlaValTyrSerAlaCysAlaAla-13
 29-GlyArgCysValAsnGlnTyr-35
 59-SerSerGlyArgPheCysGlnThrIleLys-68
 106-AlaAlaSerAlaAlaGlnSer-112
 213-SerAlaCysArgThrMetHisLysThrLeuArgProTyrVal-226
 250-ArgLeuLysGluTyr-254

Antigenic Index - Jameson-Wolf

16-ProAlaArgThrSerSerSerArgArgCysValSerSerGlyArgCysValAsnGlnTyrSerSerArgAlaA
 spAla-41
 43-ProTrpArgArgHisSerGlyAla-50
 55-CysSerSerAspSerSerGlyArgPhe-63
 73-ProSerPheSerAlaArgLysThrCysSerAspGlyGluThrSerAlaAspSerAsnTrpArg-93
 96-HisAlaAspGlyLeuGlnThrAlaSerSer-105
 112-SerAlaXxxThrAlaArgArgMetPheThr-121
 132-GlnSerArgArgPheCysCysGlyArgArgAlaAlaArgArgValProGlnArgArgArgGluAsnArgLeu
 GlnProProAspXxxGlySerArgArgArgSerAlaTyrArgValCysLeuArgArgAlaAspGlyPheProAlaA
 rgThrHisCysArgCysArgLeuLysArgArgIleLeu-193
 199-LeuProProAspArgProAspAsnArgSerAsnGlyGlyGlySerAlaCysArgThrMetHisLysThrLeu
 ArgProTyrValArgProGlnArgGlnGlyCys-233

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239-AlaAlaArgArgArgHisArgAlaArgValArgArgLeuLysGluTyrGlnThr-256

260-AsnLeuAlaProArgArgCysArgTyrAla-269

Hydrophilic Regions - Hopp-Woods

18-ArgThrSerSerSerArgArgCysValSerSer-28

35-TyrSerSerArgAlaAsp-40

45-ArgArgHisSerGly-49

55-CysSerSerAspSerSerGlyArg-62

75-PheSerAlaArgLysThrCysSerAspGlyGluThrSerAla-88

114-XxxThrAlaArgArgMetPhe-120

135-ArgPheCysCysGlyArgArgAlaAlaArgArgValProGlnArgArgArgGluAsnArgLeuGlnProPro

AspXxxGlySerArgArgArgSerAlaTyr-168

171-CysLeuArgArgAlaAspGlyPhePro-179

182-ThrHisCysArgCysArgLeuLysArgArgIleLeu-193

200-ProProAspArgProAspAsnArgSerAsnGlyGly-211

217-ThrMetHisLysThrLeuArgProTyrValArgProGlnArgGlnGly-232

239-AlaAlaArgArgArgHisArgAlaArgValArgArgLeuLysGluTyrGln-255

262-AlaProArgArgCysArgTyr-268

a038**AMPHI Regions - AMPHI**

100-GluAlaLysAspHis-104

157-GluLysGlyThrGlyGluLeuSerAlaValGlnGluValGluLys-171

178-AlaProIleAlaSerLeuAsn-184

195-GluPheGlyGlnPheLeuGluProValArgAlaTyrArgArgGlnTyrGlyVal-212

Antigenic Index - Jameson-Wolf

2-ThrAspPheArgGlnAspPhe-8

22-GluPheThrThrLysAlaGlyArgArgSerPro-32

38-GlyLeuPheAsnAspGlyLeu-44

58-IleGluSerGlyIleArg-63

85-LeuAlaGluLysGlyVal-90

96-TyrAsnArgLysGluAlaLysAspHisGlyGluGlyGly-108

125-ValIleSerAlaGlyThrSerValArgGluSerIleLysLeuIleGluAlaGluGlyAlaThr-145

153-LeuAspArgMetGluLysGlyThrGlyGlu-162

167-GlnGluValGluLysGlnTyrGlyLeu-175

191-GlnAsnAsnProGluPheGlyGln-198

203-ValArgAlaTyrArgArgGlnTyrGlyValGlu-213

Hydrophilic Regions - Hopp-Woods

2-ThrAspPheArgGlnAspPhe-8

22-GluPheThrThrLysAlaGlyArgArgSer-31

85-LeuAlaGluLysGlyVal-90

96-TyrAsnArgLysGluAlaLysAspHisGlyGlu-106

130-ThrSerValArgGluSerIleLysLeuIleGluAlaGluGlyAlaThr-145

153-LeuAspArgMetGluLysGlyThrGlyGlu-162

167-GlnGluValGluLysGlnTyr-173

204-ArgAlaTyrArgArgGlnTyrGly-211

a040**AMPHI Regions - AMPHI**

14-AlaAlaProTyrIle-18

28-AlaGlyIleAspAsp-32

38-AspThrLeuAsnLysPhe-43

78-ProHisTyrCysArgGlyLeuArgValThrAspGlu-89

92-LeuGluGlnAlaGlnGlnPheAlaGly-100

113-SerValSerGlyPheAlaArgAlaPro-121

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134-ArgProIleGlyValIleAspGly-141
146-TyrAlaGlyValIleArg-151
207-LeuSerAspGlyIleSerArgProAsp-215
226-GluAlaGlnSerLeuAlaGluHisAla-234
244-SerAlaValAlaAlaLeuGluGly-251
277-IleGlyThrSerIle-281
289-IleArgGlnAlaHisSerGlyAspIleProHisIleAlaAlaLeuIleArgProLeuGlu-308
320-TyrLeuGluAsnHisIleSerGluPheSerIle-330
338-TyrGlyCysAlaAlaLeuLysThrPheAlaGluAlaAsp-350
371-ArgLeuLeuAlaHisIle-376
386-SerArgLeuPheAla-390

Antigenic Index - Jameson-Wolf

11-PheArgGluAlaAlaProTyrIleArgGlnMetArgGlyLysThrLeu-26
29-GlyIleAspAspArgLeuLeuGluGlyAspThrLeuAsn-41
65-HisPheLeuAspArgHisAlaAlaAlaGlnGlyArgThrProHisTyrCysArgGlyLeuArgValThrAspGluThrSerLeuGluGlnAlaGln-96
101-ThrValArgSerArgPheGlu-107
119-ArgAlaProSerVal-123
140-AspGlyThrAspMetGluTyr-146
150-IleArgLysThrAspThrAlaAla-157
173-LeuGlyHisSerTyrSerGlyLysThrPhe-182
208-SerAspGlyIleSerArgProAspGlyThrLeu-218
224-AlaGlnGluAlaGlnSerLeuAlaGluHisAlaGlyGlyGluThrArgArgLeuIle-242
249-LeuGluGlyGlyVal-253
261-GlyAlaAlaAspGlySerLeuLeu-268
272-PheThrArgAsnGlyIleGlyThrSerIleAlaLysGluAlaPheVal-287
289-IleArgGlnAlaHisSerGlyAspIle-297
305-ArgProLeuGluGluGlnGly-311
313-LeuLeuHisArgSerArgGluTyrLeu-321
331-LeuGluHisAspGlyAsnLeuTyr-338
345-ThrPheAlaGluAlaAspCysGlyGlu-353
361-ProGlnAlaGlnAspGlyGlyTyrGlyGluArgLeu-372
377-IleAspLysAlaArgGly-382
393-ThrAsnThrGlyGlu-397
402-ArgGlyPheGlnThrAlaSerGluAspGluLeuProGluThrArgArgLysAspTyrArgSerAsnGlyArgAsnSerHisIleLeu-430

Hydrophilic Regions - Hopp-Woods

11-PheArgGluAlaAlaPro-16
19-ArgGlnMetArgGlyLysThr-25
29-GlyIleAspAspArgLeuLeuGluGlyAspThrLeuAsn-41
65-HisPheLeuAspArgHisAlaAlaAlaGlnGlyArgThr-77
84-LeuArgValThrAspGluThrSerLeuGluGln-94
102-ValArgSerArgPheGlu-107
140-AspGlyThrAspMetGluTyr-146
150-IleArgLysThrAspThrAlaAla-157
210-GlyIleSerArgProAspGly-216
224-AlaGlnGluAlaGlnSerLeuAlaGlu-232
234-AlaGlyGlyGluThrArgArgLeuIle-242
291-GlnAlaHisSerGlyAsp-296
305-ArgProLeuGluGluGlnGly-311
315-HisArgSerArgGluTyrLeu-321
345-ThrPheAlaGluAlaAspCysGlyGlu-353
362-GlnAlaGlnAspGlyGlyTyrGlyGlu-370

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377-IleAspLysAlaArgGly-382
402-ArgGlyPheGlnThrAlaSerGluAspGluLeuProGluThrArgArgLysAspTyrArgSerAsnGlyArg
Asn-426

a041-1**AMPHI Regions - AMPHI**

6-AspProTyrArgHisPheGluAsnLeuAspSerAlaGluThr-19
45-AspGlyIleLeuAla-49

78-LysGlyValTyrArgValCysThrAlaAla-87
102-ValAlaAspPheAspGluLeuLeu-109
117-GlyValSerHisLeuValGluGlnProAsn-126
218-MetValAsnAlaTrpArgTyrLeuAsp-226
232-IleAspLeuIleGluAlaSer-238
258-LeuAsnLeuProAsnAspCysAspValValGlyTyrLeu-270
317-GlnAlaLeuGluSerValGluThr-324
331-AlaSerLeuLeuGluAsnValGlnGlyArg-340
354-ThrGluLeuProArgLeuProSer-361
382-AspPheThrThrProLeu-387
405-GlnProGlnGlnPhe-409
451-GlyPheGlyIleProGluLeuProHisTyrLeuGlySerIleGlyLys-466
493-AlaAlaGlnGlyIleSerLysHisLysSerValAspAspLeuLeuAlaValValSer-511

519-SerSerProGluHis-523
541-ValArgGluProGlnSer-546
556-LeuThrAspMetIleArgTyr-562
571-TrpThrAspGluTyrGlyAsnProGlnLysTyrGlu-582
591-LeuSerProTyrHisAsnLeuSerAspGlyIleAspTyrProPro-605
620-AlaHisAlaLeuLys-624
645-GlyHisThrGlyAsnGlyThrGlnArgGluAla-655

Antigenic Index - Jameson-Wolf

1-MetLysSerTyrProAspProTyrArgHisPheGluAsnLeuAspSerAlaGluThrGln-20
26-AlaAsnAlaGluThrArgAlaArgPheLeuAsnAsnAspLysAlaArgAlaLeuSerAspGly-46
51-LeuGlnAspThrArgGlnIleProPhe-59

61-GlnGluHisArgAlaArg-66
72-GlnAspAlaGluTyrProLysGlyVal-80
89-TyrArgSerGlyTyrProGluTrp-96
104-AspPheAspGluLeuLeuGlyAspAspValTyr-114
123-GluGlnProAsnArg-127
132-LeuSerLysSerGlyGlyAspThr-139
145-ValAspLeuGluAlaGlyGluLeuValGlu-154
161-AlaGlyLysAsnHisValSerTrpArgAspGluAsnSerVal-174
178-ProAlaTrpAspGluArgGlnLeuThrGluSerGlyTyrProArgGluValTrpLeuValGluArgGlyLys
SerPheGluGluSerLeu-207
212-IleAlaGluAspGlyMet-217
223-ArgTyrLeuAspProGlnGlySerProIleAspLeuIleGluAlaSerAspGlyPheTyr-242
250-SerAlaGluGlyGluAlaLysProLeuAsnLeuProAsnAspCysAspVal-266
278-LeuArgLysAspTrpHisArgAlaAsnGlnSerTyrProSer-291
298-LysLeuAsnArgGlyGluLeuGly-305
312-AlaProAsnGluThrGlnAla-318

320-GluSerValGluThrThrLys-326

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337-ValGlnGlyArgLeuLysAla-343

345-ArgPheThrAspGlyLysTrpGlnGluThrGluLeuProArgLeuProSerGly-362

365-GluMetThrAspGlnProTrpGlyGly-373

401-ValMetArgArgGlnProGlnGlnPheAspSerAspGlyIleAsn-415

422-ThrSerAlaAspGlyGluArgIle-429

435-GlyLysAsnAlaAlaProAspMet-442

479-AsnIleArgGlyGlyGlyGluPheGlyProArgTrpHis-491

496-GlyIleSerLysHisLysSerValAspAsp-505

512-AspLeuSerGluArgGlyIleSerSerProGluHis-523

528-GlyGlySerAsnGly-532

540-PheValArgGluProGlnSerIleGlyAla-549

568-GlySerSerTrpThrAspGluTyrGlyAsnProGlnLysTyrGluValCysLysArgArgLeuGlyGluLeu
SerProTyr-594

596-AsnLeuSerAspGlyIleAspTyrPro-604

610-ThrSerLeuSerAspAspArgValHis-618

627-AlaLysLeuArgGluThrSerProGlnSer-636

639-TyrSerProAspGlyGlyGlyHisThrGlyAsnGlyThrGlnArgGluAlaAlaAspGluLeu-659

Hydrophilic Regions - Hopp-Woods

3-SerTyrProAspProTyrArgHis-10

12-GluAsnLeuAspSerAlaGluThr-19

26-AlaAsnAlaGluThrArgAlaArgPheLeuAsnAsnAspLysAlaArgAlaLeuSer-44

52-GlnAspThrArgGln-56

61-GlnGluHisArgAlaArg-66

72-GlnAspAlaGluTyrPro-77

104-AspPheAspGluLeuLeuGly-110

134-LysSerGlyGlyAsp-138

145-ValAspLeuGluAlaGlyGluLeuValGlu-154

166-ValSerTrpArgAspGluAsnSer-173

180-TrpAspGluArgGlnLeuThr-186

198-GluArgGlyLysSerPheGluGluSerLeu-207

212-IleAlaGluAspGlyMet-217

233-AspLeuIleGluAlaSerAsp-239

251-AlaGluGlyGluAlaLysPro-257

278-LeuArgLysAspTrpHisArg-284

298-LysLeuAsnArgGlyGluLeuGly-305

320-GluSerValGluThrThrLys-326

337-ValGlnGlyArgLeuLysAla-343

350-LysTrpGlnGluThrGluLeuProArg-358

401-ValMetArgArgGlnProGlnGlnPheAspSerAspGlyIleAsn-415

424-AlaAspGlyGluArg-428

436-LysAsnAlaAlaProAsp-441

481-ArgGlyGlyGlyGluPheGly-487

496-GlyIleSerLysHisLysSerValAspAsp-505

512-AspLeuSerGluArgGlyIleSerSer-520

540-PheValArgGluProGlnSer-546

571-TrpThrAspGluTyrGlyAsn-577

579-GlnLysTyrGluValCysLysArgArgLeuGlyGlu-590

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612-LeuSerAspAspArgValHis-618
627-AlaLysLeuArgGluThrSer-633
650-GlyThrGlnArgGluAlaAlaAspGluLeu-659

a042-1**AMPHI Regions - AMPHI**

17-AlaLeuSerAsnThrSerThr-23
33-AlaValArgSerMetMetLysIle-40
138-SerProLeuValArgIleLeuProLeuSer-147
151-SerMetValValAlaPhePheAlaAsn-159

Antigenic Index - Jameson-Wolf

14-ArgThrSerAlaLeuSerAsnThrSerThrAlaAlaGlyProSerCys-29
49-TyrSerLysGluThrGlyCysProCysProSerLeuArgLysAspSerSerThrGlyGlyArgProMetSerProCys-74
77-LeuAlaAsnArgAspCysValProLysAlaAspThr-88
93-ThrAspSerThrSerProArgProLeu-101
122-AlaArgAlaSerLeuProLysIleArgAlaLysVal-133
160-CysSerTyrAlaSerAlaProGlyPro-168

Hydrophilic Regions - Hopp-Woods

49-TyrSerLysGluThrGlyCys-55
59-SerLeuArgLysAspSerSerThrGlyGlyArgProMet-71
78-AlaAsnArgAspCysValProLysAlaAspThr-88
94-AspSerThrSerProArg-99
125-SerLeuProLysIleArgAlaLysVal-133

a043-2**AMPHI Regions - AMPHI**

24-ValGluProSerArg-28
36-HisGlyGlyLeuAspGlyAlaAlaGlyPheAspGluGlyGluArg-50
59-AlaSerGlyAspGlyPhe-64
83-AlaGlyAspPheGlyAspGlyGlnArg-91

Antigenic Index - Jameson-Wolf

1-MetProProAlaPro-5
11-IleArgArgGlnLysSerValMetProSerGluArgPheValGluProSerArg-28
35-ValHisGlyGlyLeuAspGlyAlaAlaGlyPheAspGluGlyGluArgValPhe-52
56-AlaAlaGlnAlaSerGlyAspGlyPheAla-65
79-GlnSerAspAlaAlaGlyAspPheGlyAspGlyGlnArgThrGlyGlu-94
96-ValLeuGlnAspValGlyGly-102
116-AlaGluGlyGluAlaGln-121

Hydrophilic Regions - Hopp-Woods

11-IleArgArgGlnLysSerValMetProSerGluArgPheValGluProSerArg-28
43-AlaGlyPheAspGluGlyGluArgValPhe-52
81-AspAlaAlaGlyAspPheGlyAspGlyGlnArgThrGly-93
116-AlaGluGlyGluAlaGln-121

a046**AMPHI Regions - AMPHI**

6-ArgProThrSerSerPro-11
46-ThrSerCysSerGlyLeuMetValSer-54
64-PheSerLeuPheSerSer-69
113-LysSerAlaSerSer-117
143-SerCysAsnAlaPheSerSer-149
155-ThrSerLeuLeuGlyMetAlaAlaArgPheCysAlaThrVal-168

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Antigenic Index - Jameson-Wolf

6-ArgProThrSerSerProProArgArgAlaCys-16
 20-IleArgThrArgSerSerAlaLysArgLysThrCysAsnAlaProGlyGlnSerIleArgProAlaSerCysSer-44
 57-ProAsnMetGluArgLeuPro-63
 75-SerArgTyrSerLeuGluArgThrArgAlaMetArgProGlyMetLeuAsnArgSerAlaAla-95
 105-SerLeuArgGluSerAlaSerSerLysSerAlaSerSerAlaProAlaArgSerAsnValLysGlyAspAlaProLeuProLysThrValTrpThrSerArgArgLeuProVal-142
 169-GluProThrCysProLeuProLys-176

Hydrophilic Regions - Hopp-Woods

7-ProThrSerSerProProArgArgAlaCys-16
 20-IleArgThrArgSerSerAlaLysArgLysThrCysAsn-32
 36-GlnSerIleArgProAlaSer-42
 58-AsnMetGluArgLeuPro-63
 75-SerArgTyrSerLeuGluArgThrArgAlaMetArg-86
 105-SerLeuArgGluSerAlaSerSerLysSerAlaSer-116
 118-AlaProAlaArgSerAsnValLysGlyAspAlaProLeu-130

a047**AMPHI Regions - AMPHI**

17-IleAlaAspIleAlaGlnAspLeuProAspGlyAla-28
 62-AlaGluAsnIleGlyAlaVal-68
 93-ArgLeuAlaLysGlnLeuGlu-99
 141-TyrIleAspGluIleAspValPhe-148
 161-SerAlaLeuLeuAla-165
 185-LeuLeuGluGlyAsn-189
 202-IleGlySerIleLeuAla-207
 247-SerGlyIleLysTrpProGluGlyCys-255
 257-IleAlaAlaValValArgAlaGlyThrGly-266
 293-IleLeuAsnGluLeuGluLysLeuIle-301

Antigenic Index - Jameson-Wolf

5-GlnAlaArgArgGlyGlyLeuLeu-12
 20-IleAlaGlnAspLeuProAspGlyAlaAsp-29
 36-TyrArgAsnAsnArgLeu-41
 51-IleGluGlyAspGlu-55
 70-ProGluLeuArgProLysGluThrSerThrArgArgIleMet-83
 86-GlyGlyGlyAsnIle-90
 96-LysGlnLeuGluHis-100
 106-IleIleGluCysArgProArgArgAlaGluTrpIle-117
 119-GluAsnLeuAspAsnThrLeu-125
 130-SerAlaThrAspGluThrLeuLeuAspAsnGluTyrIleAspGluIleAsp-146
 152-ThrAsnAspAspGluSerAsnIle-159
 168-LeuGlyAlaLysArgVal-173
 178-AsnArgSerSerTyr-182
 186-LeuGluGlyAsnLysIle-191
 208-HisIleArgArgGlyAspIleVal-215
 219-ProIleArgArgGlyThrAlaGluAlaIleGlu-229
 232-AlaHisGlyAspLysLysThrSer-239
 242-IleGlyArgArgIleSerGlyIleLysTrpProGluGlyCysHis-256
 262-ArgAlaGlyThrGlyGluThr-268
 277-ValIleGlnAspGlyAspHis-283
 288-ValSerArgArgArgIleLeuAsnGluLeuGluLys-299

Hydrophilic Regions - Hopp-Woods

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5-GlnAlaArgArgGlyGly-10
 20-IleAlaGlnAspLeuProAspGlyAlaAsp-29
 51-IleGluGlyAspGlu-55
 70-ProGluLeuArgProLysGluThrSerThrArgArgIleMet-83
 106-IleIleGluCysArgProArgArgAlaGluTrpIle-117
 130-SerAlaThrAspGluThrLeuLeu-137
 140-GluTyrIleAspGluIleAsp-146
 152-ThrAsnAspAspGluSerAsnIle-159
 168-LeuGlyAlaLysArgVal-173
 186-LeuGluGlyAsnLysIle-191
 209-IleArgArgGlyAspIle-214
 219-ProIleArgArgGlyThrAlaGluAlaIleGlu-229
 232-AlaHisGlyAspLysLysThrSer-239
 242-IleGlyArgArgIleSer-247
 277-ValIleGlnAspGlyAsp-282
 289-SerArgArgArgIleLeuAsnGluLeuGluLys-299

a049-2**AMPHI Regions - AMPHI**

15-GlnHisLeuLeuGlu-19
 33-ThrAspAspThrValAspGlyIleGlyGlnMet-43
 50-GlnProPheGlyGln-54
 61-GluHisPheAlaProValAspGlyPheArg-70
 79-HisGlnArgPhePhe-83
 103-IleGlyValPheProAlaPhe-109
 202-ArgGlyAlaGlyGlnArgArgValSerArgHisCys-213
 217-AlaArgLeuThrGlnValPheGlnThrPhePhe-227

Antigenic Index - Jameson-Wolf

6-PheAspTyrArgThrArgLeu-12
 20-LeuIleGlyLysAsnArgHis-26
 29-LeuHisArgArgThrAspAspThrValAspGly-39
 49-AspGlnProPheGly-53
 64-AlaProValAspGlyPheArgValGlnAsnIleAspLeuAspGlyHisGlnArgPhePhe-83
 90-PheArgAsnProValCysArgArgThrArgPheCys-101
 122-GlyIleLysProAspSerProProArgPhe-131
 135-PheArgAsnArgHisLeuGlnGlySerLeuArgVal-146
 150-PheLeuLysAspAspHisArgValGly-158
 182-GlnHisThrGlySer-186
 193-ArgHisArgArgValArgSerGlyPheArgGlyAlaGlyGlnArgArgValSerArgHisCys-213
 246-ArgGlnThrAsnProArgProLysArgGlyLeu-256

Hydrophilic Regions - Hopp-Woods

21-IleGlyLysAsnArgHis-26
 31-ArgArgThrAspAspThrValAsp-38
 72-GlnAsnIleAspLeuAspGlyHisGlnArgPhePhe-83
 93-ProValCysArgArgThrArgPheCys-101
 124-LysProAspSerProProArg-130
 150-PheLeuLysAspAspHisArgVal-157
 193-ArgHisArgArgValArgSerGlyPheArgGlyAlaGlyGlnArgArgValSerArg-211
 246-ArgGlnThrAsnProArgProLysArgGlyLeu-256

a050-1**AMPHI Regions - AMPHI**

10-IleGlnSerIleCysAspAlaPheGlnPheIleSerTyrTyr-23
 25-ProLysAspTyrIleAspAlaLeuTyrLysAlaTrpGlnLys-38
 94-ValAsnGluGlyVal-98

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163-AsnProSerAspAsnIleValAspTrpValLeuLys-174
 177-ProThrMetGlyAla-181
 235-LeuGluLeuPheGluLysValAsnAla-243
 250-GlyLeuGlyGlyLeuThrThr-256
 275-AlaMetIleProAsn-279
 302-ArgValGluAspTrpProAspLeuThr-310
 315-AsnGlyLysArgValAspValAsp-322
 353-LysArgLeuValAspMetLeuAspLys-361
 367-ValAspPheThrAsnArgLeu-373
 379-ProValAspProValGlyAspGlu-386
 396-AlaThrArgMetAspLysPheThrArgGlnMet-406
 410-ThrAspLeuLeuGlyMet-415
 452-LysSerSerLysValLeuAlaPhe-459

Antigenic Index - Jameson-Wolf

4-IleLysGlnGluAspPheIle-10
 23-TyrHisProLysAspTyrIleAspAlaLeu-32
 36-TrpGlnLysGluGluAsnProAlaAlaLysAspAlaMet-48
 55-SerArgMetCysAlaGluAsnAsnArgProIleCysGlnAspThrGly-70
 88-MetSerValGluGluMetValAsnGluGlyValArgArgAlaTyrThrTrpGluGlyAsnThrLeuArgAlaSerVal-113
 116-AspProAlaGlyLysArgGlnAsnThrLysAspAsnThr-128
 137-ValProGlyAspLysValGluVal-144
 146-CysAlaAlaLysGlyGlySerGluAsnLysSerLysLeu-159
 163-AsnProSerAspAsnIle-168
 192-GlyIleGlyGlyThrProGluLysAlaValLeuMetAlaLysGluSerLeu-208
 213-AspIleGlnGluLeuGlnGluLysAlaAlaSerGlyAlaGluLeuSerThr-229
 284-ArgHisValGluPheGluLeuAspGlySerGlyProValGluLeuThrProProArgValGluAspTrpProAspLeuThrTyrSerProAspAsnGlyLysArgValAspValAspLysLeuThrLysGluGluValAlaSer-331
 345-LeuThrGlyArgAspAlaAlaHisLysArgLeuValAspMetLeuAspLysGlyGluGluLeuPro-366
 379-ProValAspProValGlyAspGluIleValGlyProAlaGlyProThrThrAlaThrArgMetAspLysPheThrArgGlnMetLeuGluGlnThrAsp-411
 417-GlyLysSerGluArgGlyAlaAlaThr-425
 428-AlaIleAlaAspAsnLysAla-434
 450-AlaIleLysSerSerLys-455
 470-PheGluValLysAspMetPro-476
 481-ValAspSerLysGlyGluSerIle-488
 492-AlaProProGlnTrpGln-497

Hydrophilic Regions - Hopp-Woods

4-IleLysGlnGluAspPheIle-10
 36-TrpGlnLysGluGluAsnProAlaAlaLysAspAlaMet-48
 57-MetCysAlaGluAsnAsnArgProIleCys-66
 88-MetSerValGluGluMetValAsnGluGlyValArgArg-100
 117-ProAlaGlyLysArgGlnAsnThrLysAspAsnThr-128
 138-ProGlyAspLysValGluVal-144
 148-AlaLysGlyGlyGlySerGluAsnLysSerLysLeu-159
 195-GlyThrProGluLysAlaValLeuMetAlaLysGluSerLeu-208
 213-AspIleGlnGluLeuGlnGluLysAlaAlaSer-223
 225-AlaGluLeuSerThr-229
 284-ArgHisValGluPheGluLeuAspGly-292
 299-ThrProProArgValGluAspTrpPro-307
 313-ProAspAsnGlyLysArgValAspValAspLysLeuThrLysGluGluValAlaSer-331
 345-LeuThrGlyArgAspAlaAlaHisLysArgLeuValAspMetLeuAspLysGlyGluGluLeuPro-366
 382-ProValGlyAspGluIleVal-388

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397-ThrArgMetAspLysPheThrArgGlnMetLeuGluGlnThrAsp-411

417-GlyLysSerGluArgGlyAlaAlaThr-425

428-AlaIleAlaAspAsnLysAla-434

450-AlaIleLysSerSerLys-455

470-PheGluValLysAspMetPro-476

481-ValAspSerLysGlyGluSerIle-488

a052**AMPHI Regions - AMPHI**

40-AlaLysAlaSerLysSerAlaThrSerProLysGlyLeuAspGlyValSerLys-57

66-ThrAlaAlaPheHisSerPheIleSerValGlyAspThrLeuThrSerMetProAsnLeuValThrMetLeu-89

Antigenic Index - Jameson-Wolf

4-ValAlaGluGluThrGluIle-10

14-CysPheLysGlyGluProThrGlyAspSerArgLeuLeuSerThrThrLysSerAlaPro-33

36-CysAlaAsnSerAlaLysAlaSerLysSerAlaThrSerProLysGlyLeuAspGlyValSerLysAsnSerSer-60

95-ValValProAsnArgLeuArgLeu-102

108-ProAlaCysLysLysValLysAsnAlaAla-117

Hydrophilic Regions - Hopp-Woods

4-ValAlaGluGluThrGluIle-10

15-PheLysGlyGluProThrGlyAspSerArgLeu-25

29-ThrLysSerAlaPro-33

38-AsnSerAlaLysAlaSerLysSerAlaThrSerProLysGlyLeuAspGlyValSerLysAsnSer-59

98-AsnArgLeuArgLeu-102

109-AlaCysLysLysValLysAsnAlaAla-117

a075**AMPHI Regions - AMPHI**

19-LysThrProThrThrIleGlnProAlaSerIleProSer-31

65-AlaProTyrLeuArgGlnValLeu-72

80-PheLysLysCysLeuAla-85

116-AspPhePheGlnThrCysValAsnArgPhePheGluValValGluIleIleGlyIleGly-135

Antigenic Index - Jameson-Wolf

10-ThrMetGluLysThrLysSerAlaAlaLysThrProThr-22

25-GlnProAlaSerIlePro-30

52-AlaLysAlaArgGly-56

91-PhePheArgArgProProAsnIleArgLysSerValPheGlnLysSerGluTyrAspLys-110

Hydrophilic Regions - Hopp-Woods

10-ThrMetGluLysThrLysSerAlaAlaLysThr-20

52-AlaLysAlaArgGly-56

91-PhePheArgArgProProAsnIleArgLysSerValPheGlnLysSerGluTyrAspLys-110

a080**AMPHI Regions - AMPHI**

6-GluAlaMetGluArgLeuThrArg-13

95-PheProAspThrValGlu-100

108-ProValAlaArgTrpGlyAspHis-115

144-SerAlaGluMetLeuArgArgTyrAspGluPheSerThrValLeu-158

195-LysArgLeuArgLeuPheThrGluAlaTrpGlnHis-206

Antigenic Index - Jameson-Wolf

1-MetTrpAspAsnAlaGluAlaMetGluArgLeuThr-12

33-AsnSerAsnHisLeuPro-38

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42-ValSerLeuLysGly-46
 50-TyrSerAspLysLysAlaLeu-56
 67-AsnIleLeuArgThrAspIleAsnGlyAlaGlnGluAlaTyrArg-81
 90-MetValArgArgArgPheProAspThrValGlu-100
 103-LeuThrGluArgLysProValAlaArgTrpGly-113
 116-AlaLeuValAspGlyGluGlyAsnValPhe-125
 127-AlaArgLeuAspArgProGlyMetPro-135
 138-ArgGlyAlaGluGlyThrSer-144
 146-GluMetLeuArgArgTyrAspGlu-153
 163-LeuGlyIleLysGlu-167
 187-ArgLeuGlyArgGluAsnGluMetLysArgLeuArgLeu-199
 207-LeuLeuArgLysAsnLysAsnArgLeuSer-216
 220-MetArgTyrLysAspGlyPheSer-227
 230-TyrAlaProAspGlyLeuProGluLysGluSerGluGlu-242

Hydrophilic Regions - Hopp-Woods

3-AspAsnAlaGluAlaMetGluArgLeuThr-12
 50-TyrSerAspLysLysAlaLeu-56
 69-LeuArgThrAspIleAsnGlyAlaGlnGluAlaTyrArg-81
 90-MetValArgArgArgPheProAspThrVal-99
 103-LeuThrGluArgLysProValAlaArgTrpGly-113
 116-AlaLeuValAspGlyGluGlyAsnValPhe-125
 127-AlaArgLeuAspArgProGly-133
 138-ArgGlyAlaGluGlyThrSer-144
 146-GluMetLeuArgArgTyrAspGlu-153
 163-LeuGlyIleLysGlu-167
 187-ArgLeuGlyArgGluAsnGluMetLysArgLeuArgLeu-199
 208-LeuArgLysAsnLysAsnArgLeuSer-216
 220-MetArgTyrLysAspGlyPheSer-227
 234-GlyLeuProGluLysGluSerGluGlu-242

a081**AMPHI Regions - AMPHI**

22-LysProValSerArgIleValThrAspSer-31
 86-ThrAlaLeuGlnMetLeuAlaLysAlaTrpArgGluAsn-98
 116-LysGluMetLeuAlaAlaValLeuArgArg-125
 135-ThrAlaGlyAsnPhe-139
 165-MetAsnHisPheGlyGluLeuAlaValLeuThrGlnIleAlaLys-179
 185-ValAsnAsnAlaMetArg-190
 198-AspGlyValGlyAspIleAlaLysAla-206
 303-LeuAsnAspValAlaGluGlyLeuLysGlyPheSerAsnIle-316
 345-AlaAlaValAspValLeuAlaArgMetPro-354
 360-ValMetGlyAspMetGlyGluLeuGlyGlu-369
 399-ValGluAlaAlaGlu-403

Antigenic Index - Jameson-Wolf

16-ProMetProSerGluSerLysProValSer-25
 27-IleValThrAspSerArgAspIleArgAlaGlyAsp-38
 44-AlaGlyGlyArgPheAspAla-50
 67-ValSerArgGluAspCysValAla-74
 77-GlyAlaLeuLysValAspAspThrLeu-85
 94-AlaTrpArgGluAsnValAsnProPhe-102
 108-GlySerGlyGlyLysThrThrValLysGluMetLeu-119
 123-LeuArgArgArgPheGlyAspAsnAlaVal-132
 138-AsnPheAsnAsnHisIle-143
 151-LysLeuAsnGluLysHisArg-157

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178-AlaLysProAspAla-182
 194-GlyCysGlyPheAspGlyValGlyAspIleAlaLysAlaLysSerGluIle-210
 213-GlyLeuCysSerAspGly-218
 223-ProGlnGluAspAlaAsn-228
 239-LeuAsnThrArgThrPheGlyIleAspSerGlyAspValHisAla-253
 280-ValProGlyArgHisAsnVal-286
 305-AspValAlaGluGlyLeuLys-311
 313-PheSerAsnIleLysGlyArgLeuAsnValLysSerGlyIleLysGly-328
 330-ThrLeuIleAspAspThrTyrAsnAlaAsnProAspSerMetLysAlaAlaVal-347
 363-AspMetGlyGluLeuGlyGluAspGluAlaAla-373
 381-AlaTyrAlaArgAspGlnGlyIle-388
 395-GlyAspAsnSerValGluAlaAlaGluLysPheGlyAla-407
 422-LeuArgHisAspLeuProGluArgAlaThrVal-432
 434-ValLysGlySerArg-438
 443-GluGluValValGluAlaLeuGluAspLys-452

Hydrophilic Regions - Hopp-Woods

17-MetProSerGluSerLysProValSer-25
 27-IleValThrAspSerArgAspIleArgAla-36
 46-GlyArgPheAspAla-50
 67-ValSerArgGluAspCysValAla-74
 77-GlyAlaLeuLysValAspAspThrLeu-85
 94-AlaTrpArgGluAsnVal-99
 109-SerGlyGlyLysThrThrValLysGluMetLeu-119
 123-LeuArgArgArgPheGlyAsp-129
 151-LysLeuAsnGluLysHisArg-157
 178-AlaLysProAspAla-182
 199-GlyValGlyAspIleAlaLysAlaLysSerGluIle-210
 223-ProGlnGluAspAlaAsn-228
 247-AspSerGlyAspValHisAla-253
 305-AspValAlaGluGlyLeuLys-311
 316-IleLysGlyArgLeuAsnVal-322
 335-ThrTyrAsnAlaAsnProAspSerMetLysAlaAlaVal-347
 363-AspMetGlyGluLeuGlyGluAspGluAlaAla-373
 381-AlaTyrAlaArgAspGlnGlyIle-388
 397-AsnSerValGluAlaAlaGluLysPheGlyAla-407
 422-LeuArgHisAspLeuProGluArgAlaThrVal-432
 443-GluGluValValGluAlaLeuGluAspLys-452

a084-2**AMPHI Regions - AMPHI**

6-ArgIleLysAsnMetAspGlnThrLeuLysAsnThrLeuGly-19
 21-CysAlaLeuLeuAla-25
 48-AlaValGlyAlaLeuAla-53
 65-PheProArgValSer-69
 96-GlnIleValGlySerIleLeuGluSer-104
 111-GluPheValGlyAsnLeuProGly-118

Antigenic Index - Jameson-Wolf

1-MetLysGlnSerAlaArgIleLysAsnMetAspGlnThrLeuLysAsnThr-17
 40-TyrGluTyrGlyTyrArgTyrSer-47
 102-LeuGluSerAsnProAlaGluAlaArgGluPheValGly-114
 139-ValSerGlyGlyGly-143

Hydrophilic Regions - Hopp-Woods

1-MetLysGlnSerAlaArgIleLysAsnMetAspGlnThrLeu-14

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105-AsnProAlaGluAlaArgGluPheVal-113

a085-2**AMPHI Regions - AMPHI**

41-GluArgValSerGlnIleGlyLysMetPheAspGlyLeu-53

60-LeuLysAspAlaLeuSerAsnGlyPheAsp-69

89-ArgAsnGlyGlyArgValLeuGlyAspIleGluLeuLeuAlaAspIle-104

125-ThrSerLeuValGlyTyr-130

141-IleAlaGlyAsnIleGlyAla-147

174-GluAsnThrGluSerLeu-179

193-HisLeuAspArgTyrAspAspLeuLeuAspTyr-203

212-ArgGlyAspGlyValGln-217

225-PheCysArgAlaMetLysArgAla-232

275-HisAsnAlaThrAsnValMetAlaAlaValAlaLeuCysGluAla-289

300-HisValLysThrPheGlnGlyLeuProHisArgValGluLysIleGly-315

336-AlaAlaIleAlaGlyLeu-341

353-GlyLysGlyGlnAspPheThr-359

395-AspCysAlaThrLeuGluGluAlaValGlnLysAla-406

424-SerPheAspMetPheLysGlyTyr-431

Antigenic Index - Jameson-Wolf

4-GlnAsnLysLysIleLeu-9

23-TyrLeuArgLysAsnGlyAlaGluValAlaAlaTyrAspAlaGluLeuLysProGluArgValSerGlnIleGlyLysMetPheAsp-51

58-GlyArgLeuLysAspAlaLeuSerAsnGly-67

74-SerProGlyIleSerGluArgGlnProAspIleGluAlaPheLysArgAsnGlyGlyArgValLeuGly-96

104-IleValAsnArgArgGlyAspLysValIle-113

116-ThrGlySerAsnGlyLysThrThr-123

150-LeuGluAlaGluLeuGlnArgGluGlyLysLysAlaAsp-162

169-SerSerPheGlnLeuGluAsnThrGluSerLeuArgProThrAla-183

189-IleSerGluAspHisLeuAspArgTyrAspAspLeuLeu-201

204-AlaHisThrLysAlaLysIlePheArgGlyAspGlyVal-216

220-AsnAlaAspAspAlaPheCysArgAlaMetLysArgAlaGlyArgGluValLys-237

247-PheTrpLeuGluArgGluThrGlyArgLeuLysGlnGlyAsnGluAspLeuIleAla-265

291-GlyLeuProArgGluAlaLeu-297

307-LeuProHisArgValGluLysIleGlyGluLysAsnGly-319

322-PheIleAspAspSerLysGlyThrAsnVal-331

351-GlyMetGlyLysGlyGlnAspPheThrProLeuArgAspAlaLeuAlaGlyLysAlaLys-370

378-AspAlaProGlnIleArgArgAspLeuAspGlyCysAspLeuAsnMetThrAspCysAlaThrLeuGluGluAlaValGln-404

431-TyrAlaHisArgSer-435

Hydrophilic Regions - Hopp-Woods

4-GlnAsnLysLysIleLeu-9

25-ArgLysAsnGlyAlaGlu-30

32-AlaAlaTyrAspAlaGluLeuLysProGluArgValSerGln-45

59-ArgLeuLysAspAlaLeu-64

76-GlyIleSerGluArgGlnProAspIleGluAlaPheLysArgAsnGlyGly-92

104-IleValAsnArgArgGlyAspLysValIle-113

118-SerAsnGlyLysThrThr-123

150-LeuGluAlaGluLeuGlnArgGluGlyLysLysAlaAsp-162

174-GluAsnThrGluSerLeuArgPro-181

189-IleSerGluAspHisLeuAspArgTyrAspAspLeuLeu-201

204-AlaHisThrLysAlaLysIlePheArgGlyAspGly-215

220-AsnAlaAspAspAlaPheCysArgAlaMetLysArgAlaGlyArgGluValLys-237

247-PheTrpLeuGluArgGluThrGlyArgLeuLysGlnGlyAsnGluAspLeuIleAla-265

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291-GlyLeuProArgGluAlaLeu-297
309-HisArgValGluLysIleGlyGluLysAsnGly-319
324-AspAspSerLysGlyThrAsn-330
353-GlyLysGlyGlnAsp-357
359-ThrProLeuArgAspAlaLeuAlaGlyLysAlaLys-370
380-ProGlnIleArgArgAspLeuAspGlyCysAsp-390
397-AlaThrLeuGluGluAlaValGln-404
431-TyrAlaHisArgSer-435

a086**AMPHI Regions - AMPHI**

55-MetArgThrTrpArgArgLeuValPro-63
83-IleAsnGlyAlaThrArg-88
99-ProThrGluLeuPheLysLeuAlaVal-107
120-GluValLeuArgSerMetGluSerLeuGlyTrpGlnSerIleTrpArgGlyThrAlaAsn-139
155-GluMetTyrGlyArgPhe-160
185-SerPheValValIle-189
228-ArgValGlnArgValValAlaPheLeuAspProTrpLysAspProGln-243
293-GlyPhePheGlyMetCys-298
336-TrpIleGlyIleGlnSerPhe-342

Antigenic Index - Jameson-Wolf

20-LeuAlaSerLysGluGlyGlyAsp-27
55-MetArgThrTrpArgArg-60
79-AlaGlyArgGluIleAsnGlyAlaThr-87
115-PheThrArgArgGluGluValLeuArgSerMetGlu-126
134-TrpArgGlyThrAla-138
144-AlaThrAsnProGlnAlaArgArgGluThrLeuGluMet-156
225-AlaProTyrArgVal-229
236-LeuAspProTrpLysAspProGlnGlyAla-245
265-GlyLeuGlyAlaSerLeuSerLysArgGlyPheLeu-276
313-SerIleGlyLysGlnSerArgAspLeuGly-322
352-LeuProThrLysGlyLeu-357
382-IleAspTyrGluAsnArgArgLysMetArgGlyTyrArgValGlu-396

Hydrophilic Regions - Hopp-Woods

21-AlaSerLysGluGlyGlyAsp-27
79-AlaGlyArgGluIleAsnGly-85
115-PheThrArgArgGluGluValLeuArgSerMetGlu-126
147-ProGlnAlaArgArgGluThrLeuGluMet-156
238-ProTrpLysAspProGlnGly-244
270-LeuSerLysArgGlyPheLeu-276
316-LysGlnSerArgAspLeu-321
382-IleAspTyrGluAsnArgArgLysMetArgGlyTyrArgValGlu-396

a087**AMPHI Regions - AMPHI**

23-ValAlaAspSerLeuArg-28
80-GlnThrValArgGluAlaGlnGlnIle-88
99-GlyPheGlyGlyPheValThrPheProGlyGlyLeuAlaAlaLysLeuLeu-115
129-GlyLeuSerAsnArgHisLeuSerArgTrpAlaLysArgValLeuTyrAlaPheProLys-148
157-ValGlyAsnProValArg-162
192-GlyAlaAspValLeuAsnLysThrVal-200
239-GluCysValGluPheIleThrAspMetValSerAlaTyr-251
313-GluLysLeuAlaGluIleLeuGly-320
330-TrpAlaGluAsnAla-334

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Antigenic Index - Jameson-Wolf

25-AspSerLeuArgAlaArgGly-31
 37-LeuGlySerLysAspSerMetGluGluArgIleValPro-49
 61-LysGlyValArgGlyAsnGlyIleLysArgLysLeu-72
 81-ThrValArgGluAlaGlnGlnIleIleArgLysHisArgVal-94
 130-LeuSerAsnArgHisLeuSerArgTrpAlaLys-140
 150-PheSerHisGluGlyGlyLeu-156
 159-AsnProValArgAlaAspIleSer-166
 171-ProAlaGluArgPheGlnGlyArgGluGlyArgLeu-182
 195-ValLeuAsnLysThrVal-200
 207-LeuProAspAsnAlaArgProGlnMetTyrHisGlnSerGlyArgGlyLysLeuGly-225
 229-AlaAspTyrAspAla-233
 249-SerAlaTyrArgAspAlaAsp-255
 284-AlaValAspAspHisGlnThrAla-291
 309-GlnLeuThrAlaGluLysLeuAlaGlu-317
 321-GlyLeuAsnArgGluLysCysLeuLys-329
 331-AlaGluAsnAlaArgThr-336
 341-HisSerAlaAspAspValAlaGlu-348

Hydrophilic Regions - Hopp-Woods

25-AspSerLeuArgAlaArgGly-31
 39-SerLysAspSerMetGluGluArgIleValPro-49
 66-AsnGlyIleLysArgLysLeu-72
 81-ThrValArgGluAlaGlnGlnIleIleArgLysHisArgVal-94
 134-HisLeuSerArgTrpAlaLys-140
 161-ValArgAlaAspIle-165
 171-ProAlaGluArgPheGlnGlyArgGluGlyArgLeu-182
 219-SerGlyArgGlyLysLeu-224
 249-SerAlaTyrArgAspAlaAsp-255
 284-AlaValAspAspHisGlnThrAla-291
 310-LeuThrAlaGluLysLeuAlaGlu-317
 322-LeuAsnArgGluLysCysLeuLys-329
 331-AlaGluAsnAlaArg-335
 341-HisSerAlaAspAspValAlaGlu-348

a088-2**AMPHI Regions** - AMPHI

7-HisPheSerAsnTrpLeuThrGlyLeuAsnIlePheGlnTyrThrThr-22
 24-ArgAlaValMetAlaAlaLeu-30
 43-ThrIleArgArgLeuThrAlaLeuLysCysGlyGln-54
 88-LeuTrpGlyAsnTrpAlaAsn-94
 111-GlyPheTyrAspAspTrpArgLysValValTyr-121
 140-AlaIleIleAlaGlyLeuAlaLeu-147
 175-GlyPheLeuValLeuSerTyrLeuThrIle-184
 187-ThrSerAsnAlaValAsnLeuThrAspGlyLeuAspGlyLeuAlaThr-202
 221-HisSerGlnPheAlaGlnTyrLeuGlnLeuProTyr-232
 245-AlaMetCysGlyAlaCysLeuGlyPhe-253

Antigenic Index - Jameson-Wolf

48-ThrAlaLeuLysCysGlyGlnAlaValArgThrAspGlyProGln-62
 66-ValLysAsnGlyThrProThrMet-73
 114-AspAspTrpArgLysValValTyrLysAspProAsnGlyValSerAlaLysPhe-131
 193-LeuThrAspGlyLeuAsp-198
 312-LysLysThrLysLysArgIle-318
 328-TyrGluGlnLysGlyTrpLysGluThrGlnVal-338

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Hydrophilic Regions - Hopp-Woods

56-ValArgThrAspGlyProGln-62
 114-AspAspTrpArgLysValValTyrLysAspProAsnGlyVal-127
 312-LysLysThrLysLysArgIle-318
 331-LysGlyTrpLysGlu-335

a089**AMPHI Regions - AMPHI**

44-CysGlyArgProXxxLysVal-50
 73-ThrLeuValAlaLeuCysLysProCysSerGlyIle-84
 118-SerArgProAlaArgPhe-123

Antigenic Index - Jameson-Wolf

1-MetProProLysIleThrLysSerGlyPhe-10
 40-PheSerThrArgCysGlyArgProXxxLys-49
 54-SerSerAsnAlaSerArgGlyLysProThrAlaSerHisLysAla-68
 80-ProCysSerGlyIle-84
 95-CysPheArgArgProValSerArgSerAsnGlnLysSerAlaSerTyrSerAsnGluAsnHisPheThrSerA
 rgProAlaArgPheIleAlaArgGlnAsnAlaSerSerAlaPheLysThrCysThrProSerProArgLysIleLe
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Hydrophilic Regions - Hopp-Woods

43-ArgCysGlyArgProXxxLys-49
 56-AsnAlaSerArgGlyLysProThrAlaSerHisLysAla-68
 95-CysPheArgArgProValSerArgSerAsnGlnLysSerAlaSerTyrSerAsn-112
 119-ArgProAlaArgPheIleAla-125
 137-ThrProSerProArgLysIle-143

a090-1**AMPHI Regions - AMPHI**

10-SerGlnSerLeuLysArgProAspLysHisPheArg-21
 142-AspPhePheHisAlaValArgGlnAlaLeuLysGlyPheAspValPheGluGlnCysPheAla-162

164-GlnThrAspGlyPhe-168
 177-ValSerGlyValValGlnAlaLeuGlnArg-186
 226-LeuHisArgThrThrGluArgIleValArgIleGlnAsnLeuHisThrVal-242
 253-ValValGluGlnVal-257
 268-ValGlnHisCysArgArgSerArg-275
 381-GlyAlaGluCysGlnAsnIleGluThrValGlyGluArg-393
 404-ProValLysHisLeuThrAspLeuArg-412
 425-AsnLeuArgAlaValPheAlaGlnValGlyAsnHisGlyAsnThrArgAlaAlaLysSer-444

Antigenic Index - Jameson-Wolf

9-ValSerGlnSerLeuLysArgProAspLysHisPheArg-21
 29-HisIleGluThrArgAlaGlyGlyAlaGluGlnHisAspIleAla-43
 56-PheGlnSerGlyAla-60
 73-AlaAspLeuArgArgIleAspThrAspGlnGluHis-84
 89-AlaGlyLysArgValAlaGlnGlyArgGluVal-99
 107-XxxAsnHisGluGluArgIleLeuGlnThrGlyAsnArgGlyGlyGlyArgThrAspValArg-127
 149-GlnAlaLeuLysGlyPheAsp-155
 161-PheAlaArgGlnThrAspGlyPheAlaGlnGlyAsnGlySerHisHisValSer-178
 187-AsnIleLeuArgGlyAsnGln-193
 215-GlnArgLysProPheHisLeuAla-222
 228-ArgThrThrGluArgIleValArg-235
 269-GlnHisCysArgArgSerArgAlaGln-277
 285-GluThrGlyLysLeuGlnHis-291

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305-LeuGlnAsnArgArgAlaAspIleAlaArgAspAsnGlyIle-318

320-ProThrLeuAspAlaGluIleAlaAspGlnAlaArgTyrArgGly-334

339-AlaGlyAsnArgAsnHis-344

353-ValArgGlnGlnPhe-357

369-LysGlyLeuAspIle-373

380-AlaGlyAlaGluCysGlnAsn-386

398-AlaArgValLysHisGlnProVal-405

407-HisLeuThrAspLeuArgHis-413

421-IleIleArgSerAsnLeuArg-427

434-GlyAsnHisGlyAsnThrArgAlaAlaLysSerGlyAspGluAspPhePhe-450

Hydrophilic Regions - Hopp-Woods

11-GlnSerLeuLysArgProAspLysHisPheArg-21

29-HisIleGluThrArgAlaGlyGlyAlaGluGlnHisAspIleAla-43

73-AlaAspLeuArgArgIleAspThrAspGlnGluHis-84

89-AlaGlyLysArgValAlaGlnGlyArgGluVal-99

107-XxxAsnHisGluGluArgIleLeu-114

117-GlyAsnArgGlyGlyGlyArgThrAspValArg-127

228-ArgThrThrGluArgIleValArg-235

269-GlnHisCysArgArgSerArgAla-276

285-GluThrGlyLysLeuGln-290

305-LeuGlnAsnArgArgAlaAspIleAlaArgAspAsnGlyIle-318

322-LeuAspAlaGluIleAlaAspGlnAlaArgTyrArg-333

369-LysGlyLeuAspIle-373

380-AlaGlyAlaGluCysGlnAsn-386

398-AlaArgValLysHisGlnPro-404

409-ThrAspLeuArgHis-413

421-IleIleArgSerAsnLeu-426

437-GlyAsnThrArgAlaAlaLysSerGlyAspGluAspPhePhe-450

a091**AMPHI Regions - AMPHI**

39-ProLeuSerAspGlyIleAlaSerCys-47

49-IleThrArgPheGlnAlaLeuVal-56

61-ValLeuValSerValLeuThrSerLeuAlaLys-71

Antigenic Index - Jameson-Wolf

5-ValProProSerProAlaThr-11

38-LysProLeuSerAspGlyIleAla-45

a092**AMPHI Regions - AMPHI**

55-GlyMetSerGlyIleAlaGluValLeuHis-64

76-AlaArgAsnAlaAlaThrGluHisLeu-84

95-HisThrAlaGluHisValAsnGly-102

120-ValAlaAlaLeuGlu-124

137-AlaGluLeuMetArgPheArgAsp-144

209-LeuThrProIleMetSerValValThrAsnIleAsp-220

226-ThrTyrGlyHisSerValGluLysLeuHisGlnAlaPheIleAspPheIleHisArg-244

259-HisValArgAlaIleLeuProLysValSerLysProTyr-271

273-ThrTyrGlyLeuAspAspThrAla-280

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321-AsnValLeuAsnAlaLeuAlaAlaIle-329
339-ValGluAlaIleGlnLysGly-345
353-GlyArgArgPheGlnLysTyrGlyAspIleLys-363
407-ArgTyrThrArgThrArgAspLeuPheGluAspPheThrLysValLeuAsnThrValAspAlaLeu-428
449-LeuAlaArgAlaIleArgValLeuGlyLysLeu-459
464-CysGluAsnValAlaAspLeuProGluMetLeuLeuAsn-476

Antigenic Index - Jameson-Wolf

14-LeuTrpArgAlaAsnGlyGlnProPheLys-23
25-ThrProLeuArgIleGluAsnProProGluArgAsnIleMetMetLysAsnArgVal-43
70-ValSerGlySerAspGlnAlaArgAsnAlaAla-80
111-AlaValLysLysGluAsnProGluVal-119
140-MetArgPheArgAspGlyIle-146
150-GlyThrHisGlyLysThrThrThr-157
184-GlyThrAsnAlaArgLeuGlyLysGlyGluTyr-194
198-GluAlaAspGluSerAspAla-204
218-AsnIleAspGluAspHisMetAspThrTyrGly-228
230-SerValGluLysLeuHis-235
255-IleAspSerGluHisVal-260
263-IleLeuProLysValSerLysProTyrAla-272
275-GlyLeuAspAspThrAlaAsp-281
286-AspIleGluAsnValGlyAla-292
302-MetLysGlyHisGluGlnGlySerPhe-310
351-GlyValGlyArgArgPheGlnLysTyrGlyAspIleLysLeuProAsnGlyGly-368
374-AspAspTyrGlyHisHisPro-380
393-AlaTyrProGluLysArgLeu-399
404-GlnProHisArgTyrThrArgThrArgAspLeuPheGluAspPheThrLys-420
435-AlaAlaGlyGluGluProIleAlaAlaAlaAspSerArgAlaLeuAlaArg-451
466-AsnValAlaAspLeuPro-471
478-LeuGlnAspGlyAspIle-483
488-GlyAlaGlySerIleAsn-493

Hydrophilic Regions - Hopp-Woods

26-ProLeuArgIleGluAsnProProGluArgAsnIleMetMetLysAsnArgVal-43
71-SerGlySerAspGlnAlaArgAsnAlaAla-80
111-AlaValLysLysGluAsnProGlu-118
140-MetArgPheArgAsp-144
152-HisGlyLysThrThr-156
187-AlaArgLeuGlyLysGlyGlu-193
198-GluAlaAspGluSerAspAla-204
218-AsnIleAspGluAspHisMetAsp-225
230-SerValGluLysLeuHis-235
256-AspSerGluHisVal-260
275-GlyLeuAspAspThrAlaAsp-281
303-LysGlyHisGluGlnGlySer-309
351-GlyValGlyArgArgPheGlnLys-358
360-GlyAspIleLysLeu-364
393-AlaTyrProGluLysArgLeu-399
407-ArgTyrThrArgThrArgAspLeuPheGluAspPheThrLys-420
435-AlaAlaGlyGluGluProIleAlaAlaAlaAspSerArgAlaLeuAlaArg-451
466-AsnValAlaAspLeuPro-471
479-GlnAspGlyAspIle-483

a093-2**AMPHI Regions - AMPHI**

26-ThrAlaIleLeuAsn-30

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59-ThrAlaPheAsnIleLeuHisGly-66
 159-LysSerValTyrGluGluLeuLysHisPhe-168
 196-IleHisIleIleProAlaThrGluPhe-204
 254-PheLeuLysAspThr-258
 267-IleAsnThrLeuProGlyMetThrGly-275

Antigenic Index - Jameson-Wolf

12-GlyGlyPheSerSerGluArgGluIleSerLeuAspSerGlyThr-26
 32-LeuLysSerLysGlyIleAsp-38
 41-AlaPheAspProLysGluThrProLeuSerGluLeuLysAlaGlnGly-56
 66-GlyThrTyrGlyGluAspGlyAlaVal-74
 96-GlyMetAspLysTyrArgCys-102
 120-HisAspAspThrAspPheAspAlaValGluGluLysLeuGly-133
 140-ProAlaAlaGluGlySerSer-146
 151-LysValLysGlyLysGlyArgLeuLysSerValTyrGluGluLeuLysHisPheGln-169
 176-ArgPheIleGlyGlyGlyGluTyrSer-184
 189-AsnGlyLysGlyLeuPro-194
 203-GluPheTyrAspTyrGluAlaLysTyrAsnArgAsnAspThr-216
 218-TyrGlnCysProSerGluAspLeuThrGluAlaGluGluSerLeuMetArg-234
 245-GlyAlaGluGlyCysVal-250
 253-AspPheLeuLysAspThrAspGly-260
 269-ThrLeuProGlyMetThr-274

Hydrophilic Regions - Hopp-Woods

15-SerSerGluArgGluIleSerLeu-22
 32-LeuLysSerLysGlyIleAsp-38
 41-AlaPheAspProLysGluThrProLeuSerGluLeuLysAla-54
 68-TyrGlyGluAspGlyAlaVal-74
 96-GlyMetAspLysTyrArgCys-102
 120-HisAspAspThrAspPheAspAlaValGluGluLysLeuGly-133
 140-ProAlaAlaGluGlySerSer-146
 151-LysValLysGlyLysGlyArgLeuLysSerValTyrGluGluLeuLysHisPheGln-169
 205-TyrAspTyrGluAlaLysTyrAsnArgAsnAspThr-216
 221-ProSerGluAspLeuThrGluAlaGluGluSerLeuMetArg-234
 253-AspPheLeuLysAspThrAspGly-260

a094**AMPHI Regions** - AMPHI

17-LeuProProIleThrLysValGlySer-25
 80-PheSerPheLeuThrAlaVal-86

Antigenic Index - Jameson-Wolf

3-SerProLeuProLysArgAlaLeu-10
 24-GlySerSerProAlaAlaProArgMetGluAla-34
 50-MetProSerArgLysArgIleAsnSerAlaAsnIleArgAlaArgGlyIleThr-67

Hydrophilic Regions - Hopp-Woods

5-LeuProLysArgAlaLeu-10
 28-AlaAlaProArgMetGluAla-34
 51-ProSerArgLysArgIleAsn-57
 60-AsnIleArgAlaArgGly-65

a095-2**AMPHI Regions** - AMPHI

9-CysAlaSerAsnLeuPheArgGlnPheGlnGlnArgGlyGlyAspAlaValAsp-26
 38-ValLeuGlnAsnValGlnGlnHisPheGlyGlnIleGlyAsnValPheAlaVal-55
 86-PheGlyGlnHisGlnArgValAsnGlyIleGluAspPheGlyLysValPheLysGlnIleAlaArg-107

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132-GlyArgArgHisPheAspGlyValValSer-141
 174-PheLeuAspArgPheAsnArgCysAlaAspPheGlnArgHisAlaAspGlyCysGlnCysValGlnHisVal-197
 204-GlnHisAspPheLys-208
 236-AspValGlyGlyIleValGlnThrValSerSerIle-247
 274-ThrValAspGluIleAspLysArgLeuMetGlnLeuLeuAsnThrVal-289
 313-GlyCysIleArgLeuValGly-319
 370-AsnGlyAspAlaValThrGluAlaHisGlnLeuArgGlnHisGlnGlyAla-386
 417-ValAsnValPheCysGly-422
 435-MetLeuGlySerGlyIleSerArgLeuIleArgThrGly-447
 451-ThrGlnIleValGlnAspPheGlyAspThrAlaHisAla-463

Antigenic Index - Jameson-Wolf

6-SerGlyGlyCysAlaSerAsnLeu-13
 17-PheGlnGlnArgGlyGlyAspAlaValAspAlaSerArgThrHisIle-32
 62-GlnHisAlaAspGlyAlaGlyLysSerAlaGlyIleSerGlyGlyAsnArgLeuPhe-80
 88-GlnHisGlnArgValAsnGlyIleGluAspPheGlyLys-100
 112ValArgLeuGluGlyGluTyr-118
 126-AlaAlaCysGlyGlyLysGlyArgArgHisPheAspGly-138
 144-ValHisGlnGluArgGlySerThr-151
 163-AlaAlaAlaAspThrPheLysAlaGluGlnAlaPhe-174
 176-AspArgPheAsnArgCysAlaAspPheGlnArgHisAlaAspGlyCysGln-192
 205-HisAspPheLysArg-209
 253-GlyGlnAsnArgAlaAspVal-259
 263-AsnThrGlnLysGlyPheAlaVal-270
 273-HisThrValAspGluIleAspLysArgLeu-282
 300-IleGlyAsnAspGlyHisAsnArgCysGlnValGlnLysGlyCys-314
 339-PheAlaAlaAspAsnGluSerArgValLysSerCysArgAlaGluAspGlyGlyGlyGlnAlaGlyGlyArg
 GlyPheAlaValArgAlaGlyAsnGlyAspAlaValThr-375
 378-HisGlnLeuArgGlnHisGlnGlyAlaArgAsnAsnGlyAsn-391
 394-LeuGlnArgSerAspAsnPheGly-401
 405-PheAspGlyGlyArgGlyAsnAspAspIleArgThr-416
 442-ArgLeuIleArgThrGlyAsnPheLysThr-451
 455-GlnAspPheGlyAspThrAlaHisAlaAspAlaAlaAspThrAspLysMetAspVal-473

Hydrophilic Regions - Hopp-Woods

17-PheGlnGlnArgGlyGlyAspAlaValAspAlaSerArgThrHisIle-32
 64-AlaAspGlyAlaGlyLysSerAlaGly-72
 93-AsnGlyIleGluAspPheGlyLys-100
 112-ValArgLeuGluGlyGluTyr-118
 128-CysGlyGlyLysGlyArgArgHisPhe-136
 145-HisGlnGluArgGlySer-150
 163-AlaAlaAlaAspThrPheLysAlaGluGlnAlaPhe-174
 182-AlaAspPheGlnArgHisAlaAspGly-190
 205-HisAspPheLysArg-209
 273-HisThrValAspGluIleAspLysArgLeu-282
 300-IleGlyAsnAspGlyHisAsnArgCysGlnVal-310
 339-PheAlaAlaAspAsnGluSerArgValLysSerCysArgAlaGluAspGlyGlyGly-357
 368-AlaGlyAsnGlyAspAlaValThr-375
 378-HisGlnLeuArgGlnHisGlnGlyAlaArgAsnAsnGly-390
 395-GlnArgSerAspAsn-399
 407-GlyGlyArgGlyAsnAspAspIleArgThr-416
 461-AlaHisAlaAspAlaAlaAspThrAspLysMetAspVal-473

a096-2**AMPHI Regions - AMPHI**

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19-GlyIlePheGluGluIleAspAlaHis-27
 37-AlaAlaAsnArgGln-41
 61-GlyValValAlaVal-65
 112-GlnPhePheValAsnAlaPheGln-119
 129-AlaTyrAlaAlaAlaPheGlyArg-136
 172-AsnGlnPheAlaAla-176
 187-AspThrAlaAlaGlyIleGlyAsnAlaGln-196
 228-GlnTrpGlyPheLeu-232

Antigenic Index - Jameson-Wolf

4-HisThrGlyGlnGly-8
 22-GluGluIleAspAla-26
 30-PheArgThrAspCysLeuArgAlaAlaAsn-39
 73-LysLeuGlyArgGlyAspAspValTyrAla-82
 97-AlaAlaAspLysProPheGlyAsnAspPhe-106
 137-ArgPheHisLysHisArgGln-143
 157-ValGlnAspGlyGluLeuGlyAsnGlyGlnSerGlnCysLeu-170
 181-AlaAspGlyGlyCysGlyAspThr-188
 211-ThrValLysAspValGluCysArgLeu-219

Hydrophilic Regions - Hopp-Woods

22-GluGluIleAspAla-26
 33-AspCysLeuArgAlaAlaAsn-39
 74-LeuGlyArgGlyAspAspValTyr-81
 97-AlaAlaAspLysProPheGly-103
 137-ArgPheHisLysHisArgGln-143
 158-GlnAspGlyGluLeuGlyAsn-164
 183-GlyGlyCysGlyAspThr-188
 211-ThrValLysAspValGluCysArgLeu-219

a097**AMPHI Regions - AMPHI**

28-AlaGlyLeuThrThrPheLeuThrMetCysTyrIleVal-40
 72-MetGlyPheValGly-76
 166-AlaThrLeuValGlyLeuGlyAspIleHisGlnProSerAlaLeuLeuAlaLeuPheGly-185
 207-ThrIleThrValIleAlaSerLeuMetGlyLeuAsnGluPheHisGlyIleIleGlyGluValProSerIle-230
 242-LeuPheThrValSer-246
 260-PheAspSerThrGlyThr-265
 342-LeuAlaLysSerValProAlaPheAlaThr-351
 362-MetLeuArgSerAlaArgAspIle-369

Antigenic Index - Jameson-Wolf

1-MetAspThrSerLysGlnThrLeu-8
 13-PheLysLeuLysAlaAsnGlyThrThrValArgThrGluLeu-26
 125-LysValArgGluMetLeu-130
 260-PheAspSerThrGly-264
 277-ValAspGlyLysLeuProArgLeuLysArg-286
 317-SerAlaGlyGlyArgThrGly-323
 364-ArgSerAlaArgAspIleAspTrpAspAspMetThrGlu-376
 410-LeuCysArgArgThrLysAspValProPro-419

Hydrophilic Regions - Hopp-Woods

1-MetAspThrSerLys-5
 16-LysAlaAsnGlyThrThrValArgThrGluLeu-26
 125-LysValArgGluMetLeu-130

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279-GlyLysLeuProArgLeuLysArg-286
318-AlaGlyGlyArgThr-322
364-ArgSerAlaArgAspIleAspTrpAspAspMetThrGlu-376
410-LeuCysArgArgThrLysAspValPro-418

a098-2**AMPHI Regions - AMPHI**

28-AlaAlaGluAlaGlyGluGlnPheValGlyAsp-38
110-ValGlyAspPhePheLysLeuAlaPhe-118
120-CysGlnIleGlnAsnValValThrAlaIleAlaGlnIleValAla-134
163-LeuSerSerPheSerHisGly-169

Antigenic Index - Jameson-Wolf

24-ValGlnGluAspAlaAlaGluAlaGlyGlu-33
68-MetGlyMetCysArg-72
78-PheAsnHisThrAspArgGlnAlaAla-86
136-ThrAlaAsnGlyThrGlnSerGlyIleThrGlyArgAsnAlaArgLysArgAsnGlyPhe-155
158-PheGluGlyArgGlyLeuSerSerPheSerHisGlyIle-170
180-ValPheArgArgProMetArgIleCys-188

Hydrophilic Regions - Hopp-Woods

24-ValGlnGluAspAlaAlaGluAlaGlyGlu-33
79-AsnHisThrAspArgGlnAla-85
144-IleThrGlyArgAsnAlaArgLysArgAsnGly-154
158-PheGluGlyArgGly-162
180-ValPheArgArgProMetArg-186

a099**AMPHI Regions - AMPHI**

6-SerMetMetArgLeuProAspIle-13
47-AlaPheValGluPhePheGlyGluGly-55
102-LysLeuValGluThrTyrAlaLysThr-110
114-TrpAlaAspAlaLeuLysThrAla-121
135-ThrArgAsnMetAlaGlyProSerAsn-143
154-AlaGlyLysGlyLeuAlaLysProTyrGluGluProSerAspGlyGln-169
178-AlaAlaIleThrSerCysThrAsnThrSerAsnProArgAsnVal-192
251-ThrCysAsnGlyMetSer-256
341-IleAspAlaIleValAlaGluTyr-348
350-LysProGlnGlnPheArgAspVal-357
371-ProSerProLeuTyrAspTrpArg-378
381-SerThrTyrIleArg-385
400-LeuSerGlyMetArgProLeu-406
443-AspPheAsnSerTyrAlaThr-449
468-PheAsnGluMetValArg-473
494-MetArgMetTrpGluAlaIleGluThrTyrMet-504
532-ArgLeuAlaGlyVal-536
539-IleValAlaGluGlyPheGluArgIleHisArgThrAsn-551
575-GlyThrGluThrTyr-579

Antigenic Index - Jameson-Wolf

18-LeuAsnGlyLysArgLysAlaGly-25
38-PheLeuArgLysGluArgValVal-45
53-GlyGluGlyAlaArgSer-58
60-SerIleGlyAspArgAlaThr-66
70-MetThrProGluPhe-74
83-IleAspGluGlnThr-87
94-ThrGlyArgAspAspAlaGlnValLysLeu-103

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133-SerValThrArgAsnMetAlaGlyProSerAsnProHis-145
153-LeuAlaGlyLysGlyLeuAlaLysProTyrGluGluProSerAspGlyGlnMetProAspGlyAla-174
183-CysThrAsnThrSerAsnProArgAsnVal-192
206-GlyLeuGlnArgLysProTrpValLysSerSerPheAlaProGlySerLysValAla-224
227-TyrLeuLysGluAlaAspLeuLeuProGluMetGluLysLeu-240
251-ThrCysAsnGlyMetSerGlyAlaLeuAspProLysIleGlnLysGluIleIleAspArgAspLeuTyr-273
279-SerGlyAsnArgAsnPheAspGlyArgIleHisProTyrAlaLys-293
312-IleArgPheAspIleGluAsnAspVal-320
322-GlyValAlaAspGlyLysGluIleArgLeuLysAspIleTrpProThrAspGluGluIleAsp-342
348-TyrValLysProGlnGlnPheArgAsp-356
363-AspThrGlyThrAlaGlnLysAlaProSerProLeuTyrAspTrpArgProMetSerThrTyrIleArgArgProProTyrTrp-390
394-LeuAlaGlyGluArgThrLeuSerGlyMetArg-404
409-LeuProAspAsnIleThrThrAspHisLeuSerProSerAsn-422
438-GlyLeuProGluGluAspPheAsnSerTyrAlaThrHisArgGlyAspHisLeuThr-456
463-AlaAsnProLysLeuPhe-468
471-MetValArgAsnGluAspGlySerValArgGlnGlySerLeuAlaArgValGluProGluGlyGlnThr-493
503-TyrMetAsnArgLysGlnPro-509
516-AlaAspTyrGlyGlnGlySerSerArgAspTrpAlaAlaLysGlyValArg-532
543-GlyPheGluArgIleHisArgThrAsnLeu-552
562-PheLysProGlyThrAsnArgHisThrLeuGlnLeuAspGlyThrGluThrTyrAspValValGlyGluArgThrProArgCysAspLeu-591
595-IleHisArgLysAsnGlyGluThrValGlu-604
609-CysArgLeuAspThrAlaGluGlu-616

Hydrophilic Regions - Hopp-Woods

18-LeuAsnGlyLysArgLysAlaGly-25
38-PheLeuArgLysGluArgValVal-45
53-GlyGluGlyAlaArg-57
60-SerIleGlyAspArgAlaThr-66
83-IleAspGluGlnThr-87
94-ThrGlyArgAspAspAlaGlnValLysLeu-103
157-GlyLeuAlaLysProTyrGluGluProSerAspGlyGlnMetPro-171
227-TyrLeuLysGluAlaAspLeuLeuProGluMetGluLysLeu-240
259-LeuAspProLysIleGlnLysGluIleIleAspArgAspLeuTyr-273
282-ArgAsnPheAspGlyArgIle-288
312-IleArgPheAspIleGluAsnAspVal-320
324-AlaAspGlyLysGluIleArgLeuLysAsp-333
335-TrpProThrAspGluGluIleAsp-342
366-ThrAlaGlnLysAlaPro-371
394-LeuAlaGlyGluArgThrLeuSer-401
438-GlyLeuProGluGluAspPheAsn-445
450-HisArgGlyAspHisLeuThr-456
471-MetValArgAsnGluAspGlySerValArgGln-481
485-AlaArgValGluProGluGlyGlnThr-493
503-TyrMetAsnArgLysGlnPro-509
518-TyrGlyGlnGlySerSerArgAspTrpAlaAlaLysGlyValArg-532
543-GlyPheGluArgIleHisArg-549
564-ProGlyThrAsnArgHis-569
574-AspGlyThrGluThr-578
580-AspValValGlyGluArgThrProArgCysAsp-590
595-IleHisArgLysAsnGlyGluThrValGlu-604
609-CysArgLeuAspThrAlaGluGlu-616

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a102**AMPHI Regions - AMPHI**

42-ValLeuLeuTyrThrTrpPheSerMetLeu-51
 67-GlyAlaXxxPheAspThrMetValLysAspLeuLeuGlyArgSerTrpAsnIleIleAsnGlyIleAla-89
 109-ThrAlaLysGlyLeuGlySerAlaAla-117
 128-LeuValPhePheGlyIleLeuAlaPheCys-137
 144-LeuValAspArgPheThrSerValLeu-152
 155-GlyMetValLeuThr-159
 207-AsnValSerSerLeuLeuLysTyrPheLys-216
 221-LysValAlaLysSerIle-226
 267-IleGluThrLeuSerLysPheAlaGlnThrGlyAsnMetAspLysIleLeuSerLeuPheSerTyrMetAla-290
 303-PheAspTyrIleAlaAspIlePheLysTrpAsnAsp-314
 341-PheValThrAlaIleGlyTyr-347
 352-AlaThrValTrpThrGlyIleIlePro-360
 374-GlyLysThrTyrLysVal-379

Antigenic Index - Jameson-Wolf

1-MetProThrLysThrProSerLeu-8
 77-LeuLeuGlyArgSer-81
 107-AspLeuThrAlaLysGlyLeuGlySerAlaAlaGlyGly-119
 143-ArgLeuValAspArgPheThr-149
 179-ThrGlnAlaProThrGlyThrAsn-186
 214-TyrPheLysGlyAspAlaProLysValAla-223
 246-XxxAsnLeuProArgAsnGluPhe-253
 274-AlaGlnThrGlyAsnMetAspLysIle-282
 311-LysTrpAsnAspSerValSerGlyArgThrLysThr-322
 364-LeuTyrArgSerArgLysLysPheGlyAlaGlyLysThrTyrLysVal-379

Hydrophilic Regions - Hopp-Woods

1-MetProThrLysThr-5
 143-ArgLeuValAspArgPheThr-149
 215-PheLysGlyAspAlaProLysValAla-223
 248-LeuProArgAsnGluPhe-253
 277-GlyAsnMetAspLys-281
 316-ValSerGlyArgThrLysThr-322
 366-ArgSerArgLysLysPheGlyAla-373

a105**AMPHI Regions - AMPHI**

11-TrpIleGlyLeuGly-15
 22-ValThrArgLeuLeuAsp-27
 51-LysValTyrGlyAsnThrAlaGluLeu-59
 74-AlaAlaValCysAspIleLeuAsnGlyValArgAspGlyLeu-87
 97-ThrIleSerProThr-101
 110-ValGluAlaAlaGlyGlyGlnPheAlaGluAlaProVal-122
 143-AlaValLeuAsnProLeuGlnLysIlePheSer-153
 162-PheGlyAspValGlyLysGlySer-169
 176-AsnSerLeuLeuGlyIlePheGlyGluAlaTyr-186
 203-IleValGluAlaIleGlyGlySerAla-211
 249-LeuGluGlnAlaGlyAsnThrLeuProAlaValGlu-260
 263-AlaAlaSerTyrArgLysAlaValGluAla-272

Antigenic Index - Jameson-Wolf

2-SerAlaAsnGluTyrThr-7
 25-LeuLeuAspGlyGlyIleGlu-31

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34-ValTyrAsnArgSerProAspLysThrAlaProIleSerAlaLysGlyAlaLysValTyrGlyAsnThr-56
 81-AsnGlyValArgAspGlyLeuAla-88
 96-SerThrIleSerProThrGluAsnLeuAla-105
 121-ProValSerGlySerValGlyProAlaThr-130
 139-GlyGlySerGluAla-143
 155-ValGlyLysLysThrPheHisPheGlyAspValGlyLysGlySerGly-170
 196-PheGlyIleAspThrAspThrIleVal-204
 210-SerAlaMetAspSerProMetPheGlnThrLysLysSerLeuTrpAlaAsnArgGluPheProPro-231
 237-HisAlaSerLysAspLeuAsnLeuAlaValLysGluLeuGluGlnAlaGlyAsnThrLeuPro-257
 264-AlaSerTyrArgLysAlaValGluAlaGlyTyrGlyGluGlnAspValSerGly-281

Hydrophilic Regions - Hopp-Woods

25-LeuLeuAspGlyGlyIle-30
 37-ArgSerProAspLysThrAlaProIleSerAlaLysGlyAlaLys-51
 81-AsnGlyValArgAspGlyLeuAla-88
 164-AspValGlyLysGlySerGly-170
 196-PheGlyIleAspThrAspThrIle-203
 218-GlnThrLysLysSerLeuTrpAla-225
 237-HisAlaSerLysAspLeuAsnLeuAlaValLysGluLeuGluGlnAlaGly-253
 265-SerTyrArgLysAlaValGlu-271
 273-GlyTyrGlyGluGlnAspVal-279

a109-2**AMPHI Regions - AMPHI**

6-GlyThrTyrArgAspLeuHisArgProAlaSerGlu-17
 53-LeuIleProAlaMetAlaGlyThrIleGly-62
 69-AlaValAlaAlaAlaPhe-74
 145-GlyLeuLeuMetAla-149
 156-IleMetAlaLysLeuThrSer-162
 177-GlyThrThrGlyGlnValLysLysLeuPheSerTrpAlaGly-190
 207-ValMetTyrAlaLeuLeuGluHisTrpLysLysArgTrpLeu-220
 222-ValProLeuGlyCys-226
 294-HisGlnValPheGlnLysIle-300
 326-ValGlySerIleLeuGly-331
 336-ThrSerSerTrpGlyThr-341
 471-AlaValGlyMetLeuProGlyIleProProPheLeuGluHisPheLysSerLeu-488

Antigenic Index - Jameson-Wolf

1-MetGluLysHisAsnGlyThrTyrArgAspLeuHisArgProAlaSer-16
 18-PheAlaThrArgAspGluTyrLeuGlu-26
 32-MetGlnProLysArgTrpArgProAsnLeuProPheArgAspTyrArgPheGluTrp-50
 78-LeuGlyLeuProAsp-82
 109-ProGlyAlaAsnLeuProGlyThrHis-117
 160-LeuThrSerAsnGlyVal-165
 179-ThrGlyGlnValLysLys-184
 245-AlaProGlyLeuProPro-250
 259-GluAsnSerGlyTrp-263
 301-SerTyrProGluLysThrAspLysVal-309
 312-AsnIleAspAspThrMetThr-318
 348-IleAlaLysArgProIleProGlyGly-356
 398-AlaGlyMetGluMetThrArgLysGlyLysThrThrGlnSer-411
 441-GlyCysLysGluArgSerAla-447

Hydrophilic Regions - Hopp-Woods

1-MetGluLysHisAsnGlyThrTyrArgAspLeuHisArgProAlaSer-16
 18-PheAlaThrArgAspGluTyrLeuGlu-26

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35-LysArgTrpArgPro-39
44-ArgAspTyrArgPheGluTrp-50
180-GlyGlnValLysLys-184
301-SerTyrProGluLysThrAspLysVal-309
313-IleAspAspThrMetThr-318
348-IleAlaLysArgProIlePro-354
398-AlaGlyMetGluMetThrArgLysGlyLysThrThrGln-410
441-GlyCysLysGluArgSerAla-447

a111**AMPHI Regions** - AMPHI

6-ArgLeuProAsnPheIleArgThrLeu-14
58-ProSerProAlaGluIleGlnLysArgIleAspAspAlaLeuLysGluValAsnArgGlnMetSer-79
90-PheAsnGlnHisThrAlaGly-96
128-GlyProLeuValAsnLeuTrp-134
151-IleLysGlnAlaAlaSerTyrThrGly-159
170-AspTyrAlaSerLeu-174
183-LeuAspLeuSerSerIleAlaLys-190
209-TyrLeuValGluIleGlyGly-215
314-GluThrGluAlaLeu-318

Antigenic Index - Jameson-Wolf

1-MetProSerGluThrArgLeuProAsnPhe-10
26-CysSerGluGlnThrAla-31
37-GlnGlyGluThrMetGly-42
49-TyrLeuSerAsnAsnArgAspLysLeuProSerProAlaGluIleGlnLysArgIleAspAspAlaLeuLysGluValAsnArgGlnMetSerThrTyrGlnProAspSerGluIleSerArgPheAsnGlnHisThrAlaGlyLysProLeuArgIleSerSerAspPhe-105
135-GlyPheGlyProAspLysSerValThrArgGluProSerProGluGlnIleLysGln-153
163-IleIleLeuLysGlnGlyLysAspTyrAlaSerLeuSerLysThrHisProLysAla-181
192-PheGlyValAspLysValAlaGlyGluLeuGluLysTyrGly-205
213-IleGlyGlyGluLeuHisGlyLysGlyLysAsnAlaArgGlyGluProTrpArgIleGlyIleGluGlnProAsnIle-238
250-LeuAsnAsnArgSerLeuAlaThrSerGlyAspTyrArg-262
264-PheHisValAspLysSerGlyLysArgLeuSer-274
277-IleAsnProAsnAsnLysArgProIleSer-286
299-AlaMetThrAlaAspGlyLeuSer-306
314-GluThrGluAlaLeuLysLeuAlaGluArgGluLysLeu-326
332-ValArgAspLysGlyGlyTyrArg-339
342-MetSerSerGluPheGluLysLeuLeuArg-351

Hydrophilic Regions - Hopp-Woods

1-MetProSerGluThrArgLeu-7
26-CysSerGluGlnThrAla-31
51-SerAsnAsnArgAspLysLeuProSer-59
61-AlaGluIleGlnLysArgIleAspAspAlaLeuLysGluValAsnArgGln-77
82-GlnProAspSerGluIleSerArg-89
97-LysProLeuArgIleSerSer-103
137-GlyProAspLysSerValThrArgGluProSerProGluGlnIleLysGln-153
163-IleIleLeuLysGlnGlyLysAspTyrAlaSer-173
175-SerLysThrHisPro-179
192-PheGlyValAspLysValAlaGlyGluLeuGluLysTyrGly-205
217-LeuHisGlyLysGlyLysAsnAlaArgGlyGluProTrp-229
265-HisValAspLysSerGlyLysArgLeuSer-274
279-ProAsnAsnLysArgProIle-285
314-GluThrGluAlaLeuLysLeuAlaGluArgGluLysLeu-326

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332-ValArgAspLysGlyGlyTyr-338
 344-SerGluPheGluLysLeuLeuArg-351

a117-1**AMPHI Regions - AMPHI**

6-ProIleGlnAspThrGlnSerAla-13
 15-LeuGlnGluLeuArgGluTrpPheAspSerTyrCysThr-27
 57-GlyGluProLeuProAspHis-63
 72-HisGluLeuAspLeuLeu-77
 79-AspAlaValAlaAlaThrLeuLeuAlaAspIleGlyArgTyr-92
 104-CysAsnSerThrValAlaGluLeuValLysGlyValAspGluValGlnLysLeuThrHisPheAlaArgVal
 AspSerLeu-130
 145-LysMetLeuLeuAlaMet-150
 170-PheLeuSerAsnAlaProAspSerProGluLys-180
 216-GluProGluLysTyrArg-221
 234-ArgLeuGluTyrIleGluAsnPheLeuAsnIleLeuArg-246
 260-GlyArgProLysHisIleTyrSerIleTyrLys-270
 282-LeuPheAspIleArg-286
 290-IleLeuValAspThrValProGluCysTyrThrThrLeuGlyIleValHisSerLeuTrpGlnProIlePro
 GlyGluPheAspAspTyrIleAla-321
 327-GlyTyrLysSerLeuHisThr-333
 351-AspMetHisGlnPheAsnGluPheGlyValAla-361
 385-GlnLeuLeuAspTrp-389
 440-HisSerSerIleGlyAspArg-446
 493-LysAlaIleGlyLysIleArgAlaTyr-501
 504-GlnGlnAsnAlaAsp-508
 521-GlnLeuAlaLysLeu-525
 532-GlnGluLeuAlaGlu-536
 539-GlyTyrLysLysProGluAspLeuTyrThr-548
 557-AsnArgAlaIleGlnLysAlaCysGlyThrLeuAsnGluProPro-571
 585-LysIleLysLysGlyGly-590
 603-MetThrThrLeuAlaLysCysCysLysProAla-613
 616-AspAspIleValGly-620
 637-SerPheArgHisLeuAlaGluHisAlaProGluLysValLeuAspAla-652
 679-ArgAspValSerAspAla-684
 714-GlnValThrAspLeuProArgValLeuAlaSerLeuGlyAspValLysGlyValLeuSerValThrArg-73
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Antigenic Index - Jameson-Wolf

5-SerProIleGlnAspThrGlnSerAlaThr-14
 16-GlnGluLeuArgGluTrpPheAspSerTyrCysThrAlaLeuProAsnAsnAspLysLysLeu-36
 52-AlaAlaThrProTyrGlyGluProLeuProAspHisPhe-64
 88-AspIleGlyArgTyrValProAspTrp-96
 100-ValSerGluArgCysAsnSerThrVal-108
 110-GluLeuValLysGlyValAspGluValGlnLys-120
 125-AlaArgValAspSerLeuAlaThrProGluGluArgAlaGlnGlnAlaGluThrMetArg-144
 162-AlaMetArgThrArgThr-167
 173-AsnAlaProAspSerProGluLysArgAlaValAlaLysGluThrLeu-188
 209-AspLeuGlyPheArgHisGlnGluProGluLysTyrArgGlu-222
 227-LeuAspGluLysArgThrGluArgLeuGluTyr-237
 245-LeuArgThrGluLeuLysLys-251
 258-ValAlaGlyArgProLysHis-264
 271-LysMetValLysLysLysLeuSerPhe-279
 294-ThrValProGluCysTyr-299
 311-ProIleProGlyGluPheAspAspTyrIleAlaAsnProLysGlyAsnGlyTyrLysSer-330
 335-IleValGlyProGluAspLysGlyValGluValGlnIleArgThr-349

364-TrpArgTyrLysGluGlyGlyLysGlyAspSerAlaTyrGluGlnLys-379
387-LeuAspTrpArgGluAsnMetAlaGluSerGlyLysGluAspLeuAlaAla-403
418-ThrProHisGlyLys-422
440-HisSerSerIleGlyAspArgCysArgGlyAlaLysValGluGly-454
461-ThrProLeuGluAsnGlyGlnArgValGluIleIleThrAlaLysGluGlyHisProSerValAsn-482
487-GlyTrpValLysSerAsnLysAlaIleGlyLys-497
502-IleArgGlnGlnAsnAlaAspThrValArgGluGluGlyArgValGlnLeuAspLysGlnLeuAla-523
525-LeuThrProLysProAsnLeuGlnGluLeuAlaGlu-536
538-LeuGlyTyrLysLysProGluAspLeu-546
551-GlyGlnGlyGluIleSerAsnArgAlaIleGlnLysAlaCysGlyThrLeuAsnGluProProProValPro-574
582-LysGlnSerLysIleLysLysGlyGlyLysAsnGlyVal-594
596-IleAspGlyGluAspGlyLeu-602
608-LysCysCysLysProAlaProProAspAspIleVal-619
622-ValThrArgAspArgGlyIleSerValHisArgLysThrCysProSerPhe-638
644-HisAlaProGluLysValLeuAsp-651
667-IleGluIleArgAlaGlnAspArgSerGlyLeuLeuArgAspValSerAspAlaLeuAlaArgHisLysLeu-690
696-GlnThrGlnSerArgAspLeuGluAlaSerMet-706
710-LeuGluValLysGlnValThrAspLeuProArg-720
726-GlyAspValLysGly-730

Hydrophilic Regions - Hopp-Woods

8-GlnAspThrGlnSer-12
16-GlnGluLeuArgGluTrpPhe-22
30-ProAsnAsnAspLysLysLeu-36
100-ValSerGluArgCysAsnSerThr-107
110-GluLeuValLysGlyValAspGluValGlnLys-120
125-AlaArgValAspSer-129
131-AlaThrProGluGluArgAlaGlnGlnAlaGluThrMetArg-144
162-AlaMetArgThrArgThr-167
174-AlaProAspSerProGluLysArgAlaValAlaLysGluThrLeu-188
209-AspLeuGlyPheArgHisGlnGluProGluLysTyrArgGlu-222
227-LeuAspGluLysArgThrGluArgLeuGluTyr-237
245-LeuArgThrGluLeuLysLys-251
258-ValAlaGlyArgProLysHis-264
271-LysMetValLysLysLysLeuSerPhe-279
314-GlyGluPheAspAsp-318
323-ProLysGlyAsnGly-327
337-GlyProGluAspLysGlyValGluValGlnIleArgThr-349
365-ArgTyrLysGluGlyGlyLysGlyAspSerAlaTyrGluGln-378
387-LeuAspTrpArgGluAsnMetAlaGluSerGlyLysGluAspLeuAlaAla-403
443-IleGlyAspArgCysArgGlyAlaLysValGluGly-454
463-LeuGluAsnGlyGlnArgValGluIleIleThrAlaLysGluGlyHisPro-479
489-ValLysSerAsnLysAlaIleGlyLys-497
505-GlnAsnAlaAspThrValArgGluGluGlyArgValGlnLeuAspLysGlnLeuAla-523
538-LeuGlyTyrLysLysProGluAspLeu-546
553-GlyGluIleSerAsn-557
582-LysGlnSerLysIleLysLysGlyGlyLys-591
596-IleAspGlyGluAspGlyLeu-602
608-LysCysCysLysProAlaProProAspAspIle-618
622-ValThrArgAspArgGlyIleSerValHisArgLysThrCysPro-636
644-HisAlaProGluLysValLeu-650
667-IleGluIleArgAlaGlnAspArgSerGlyLeuLeuArgAspValSerAspAlaLeuAlaArgHisLysLeu-690

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697-ThrGlnSerArgAspLeuGluAlaSerMet-706
 710-LeuGluValLysGlnValThrAspLeuProArg-720
 726-GlyAspValLysGly-730

a118**AMPHI Regions - AMPHI**

24-GlyLysTrpTyrAsp-28
 57-IleProArgAspIle-61
 65-IleGlyThrIleIleAspPheLeuMetValProAsn-76
 94-IleHisGluArgTyrGluArgPheThrThrMetLeuArg-106

Antigenic Index - Jameson-Wolf

2-CysGluPheLysAspPheArgArgAsnIleProCys-13
 15-GluGluTyrAspGluAsnSerPhe-22
 24-GlyLysTrpTyrAspAspGlyValTrpAspAspGluGluTyrTrpLysLeuGluAsnAspLeuIleGluValA
 rgLysLysTyrProTyrProMetAspIleProArgAspIle-61
 86-ProTrpLeuProAspSer-91
 93-GlyIleHisGluArgTyrGluArg-100
 109-PheThrGluLysAspIleVal-115
 119-PheAspTyrTyrAsnLysLys-125

Hydrophilic Regions - Hopp-Woods

2-CysGluPheLysAspPheArgArgAsnIleProCys-13
 15-GluGluTyrAspGlu-19
 30-GlyValTrpAspAspGluGluTyrTrpLysLeuGluAsnAspLeuIleGluValArgLysLysTyrProTyr-
 53
 96-GluArgTyrGluArg-100
 109-PheThrGluLysAspIleVal-115
 121-TyrTyrAsnLysLys-125

a120**AMPHI Regions - AMPHI**

6-LysAsnIlePheSerAla-11
 49-SerGlyAsnAlaTyrLysIleValSerThrIleLys-60
 77-AsnThrLeuHisProThrTyrTyrArgAspIleArgArg-89
 142-IleThrAsnGlyLysLysLeuTyrSerValGlyGlyLeuAsnLysAlaGly-158
 189-ProSerLeuAsnAsnIleProAla-196

Antigenic Index - Jameson-Wolf

35-SerGlySerTyrGly-39
 45-ThrPheGluArgSerGlyAsnAlaTyrLys-54
 68-PheGluSerGlyGlyThrValVal-75
 85-ArgAspIleArgArgGlyLysLeuTyrAlaGlu-95
 97-LysPheAlaAspGlySerValThrTyrGlyLysAlaGlyGluSerLysThrGluGlnSerProLysAla-119
 131-AlaAsnAspAlaLysLeuProProGlyLeuLysIleThrAsnGlyLysLysLeuTyrSer-150
 153-GlyLeuAsnLysAlaGlyThrGlyLysTyrSerIleGlyGlyValGluThrGluValValLysTyrArgVal
 ArgArgGlyAspAspAlaVal-183
 199-GlyTyrThrAspAspGlyLysThrTyr-207
 218-GlyGlnAlaAlaLysPro-223

Hydrophilic Regions - Hopp-Woods

45-ThrPheGluArgSerGlyAsn-51
 85-ArgAspIleArgArgGlyLysLeuTyrAla-94
 107-LysAlaGlyGluSerLysThrGluGlnSerProLysAla-119
 131-AlaAsnAspAlaLysLeu-136
 143-ThrAsnGlyLysLysLeuTyr-149
 155-AsnLysAlaGlyThrGly-160

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167-ValGluThrGluValValLysTyrArgValArgArgGlyAspAspAla-182
 200-TyrThrAspAspGlyLysThrTyr-207
 219-GlnAlaAlaLysPro-223

a121-1**AMPHI Regions - AMPHI**

68-GlnGluLeuSerArgLeuTyrAlaGlnThr-77
 101-ThrValArgHisAlaPro-106
 148-ProAlaPheHisGlu-152
 165-LeuAsnIleGlyGlyIleAlaAsnIle-173
 189-ProGlyAsnMetLeuMetAspAlaTrpMetGlnAla-200
 216-GlyAsnIleLeuProGlnLeuLeuAspArgLeuLeu-227
 237-ProLysSerThrGly-241
 251-GluThrTyrLeuAsp-255
 262-AspValLeuArgThrLeuSerArgPheThrAlaGlnThrValPheAspAlaValSerHis-281
 303-AlaAspLeuAlaGluCysPhe-309
 341-ValAsnArgIleProGlySerPro-348

Antigenic Index - Jameson-Wolf

13-ThrSerMetAspGlyAlaAsp-19
 23-IleArgMetAspGlyGlyLysTrpLeuGly-32
 40-ProTyrProGlyArgLeuArgArgLysLeuLeuAspLeuGlnAspThrGlyAlaAspGluLeuHisArgSerArgMetLeuSer-67
 86-AsnLeuAlaProSerAspIleThrAla-94
 97-CysHisGlyGlnThrValArgHisAlaProGluHisSerTyrSer-111
 119-LeuLeuAlaGluArgThrGln-125
 129-ValGlyAspPheArgSerArgAspLeuAlaAlaGlyGlyGlnGly-143
 154-LeuPheArgAspAspArgGluThrArgAla-163
 177-ProProAspAlaPro-181
 184-GlyPheAspThrGlyProGlyAsn-191
 205-ProTyrAspLysAsnGlyAlaLysAlaAlaGlnGlyAsn-217
 235-ProHisProLysSerThrGlyArgGlu-243
 253-TyrLeuAspGlyGlyGluAsnArgTyrAspValLeuArgThrLeuSer-268
 283-AlaAlaAspAlaArgGln-288
 293-GlyGlyGlyIleArgAsnProValLeu-301
 344-IleProGlySerProHisLysAlaThrGlyAlaSerLysProCysIle-359

Hydrophilic Regions - Hopp-Woods

13-ThrSerMetAspGlyAlaAsp-19
 43-GlyArgLeuArgArgLysLeuLeuAspLeuGlnAspThrGlyAlaAspGluLeuHisArgSerArgMetLeuSer-67
 101-ThrValArgHisAlaPro-106
 119-LeuLeuAlaGluArgThrGln-125
 131-AspPheArgSerArgAspLeuAlaAla-139
 154-LeuPheArgAspAspArgGluThrArgAla-163
 206-TyrAspLysAsnGlyAlaLysAlaAlaGln-215
 236-HisProLysSerThrGlyArgGlu-243
 254-LeuAspGlyGlyGluAsnArgTyrAspVal-263
 283-AlaAlaAspAlaArgGln-288
 344-IleProGlySerProHisLysAlaThrGlyAlaSer-355

a122-1**AMPHI Regions - AMPHI**

6-AsnIleHisLysThrPhe-11
 42-ThrPheLeuArgCysLeuAsnAlaLeuGluMetProGlu-54
 102-LeuGluAsnValMetGlu-107
 126-LysLeuLeuGluLys-130

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176-ProGluLeuValGlnAspValLeuAsnAlaMetLysGluLeuAlaArgGluGly-193
 227-ProLysGluLeuPheAspHisPro-234

Antigenic Index - Jameson-Wolf

5-ArgAsnIleHisLysThrPheGlyLysAsnThrIle-16
 23-AspValCysLysGlyGln-28
 34-GlyProSerGlySerGlyLysThrThr-42
 51-GluMetProGluAspGlyGlnIleGluPheAspAsnGluArgProLeuLysIleAspPheSerLysLysProSerLysHisAspIle-79
 81-AlaLeuArgArgLysSerGlyMet-88
 96-PheProHisLysThrAlaLeu-102
 114-GlyLysProAlaAlaGlnAlaArgGluGluAlaLeuLysLeuLeuGlu-129
 131-ValGlyLeuGlyAspLysValAspLeu-139
 145-SerGlyGlyGlnGlnGlnArgValGlyIle-154
 168-AspGluProThrSerAlaLeuAspProGluLeuVal-179
 184-AsnAlaMetLysGluLeuAlaArgGluGlyTrp-194
 222-ValGluGlnGlySerProLysGluLeuPheAspHisProLysHisGluArgThrArgArgPheLeuSer-244

Hydrophilic Regions - Hopp-Woods

51-GluMetProGluAspGlyGlnIleGluPheAspAsnGluArgProLeuLysIleAspPheSerLysLysProSerLysHisAsp-78
 81-AlaLeuArgArgLysSerGly-87
 114-GlyLysProAlaAlaGlnAlaArgGluGluAlaLeuLysLeuLeuGlu-129
 131-ValGlyLeuGlyAspLysValAsp-138
 168-AspGluProThrSerAlaLeuAspProGluLeuVal-179
 184-AsnAlaMetLysGluLeuAlaArg-191
 224-GlnGlySerProLysGluLeuPheAspHisProLysHisGluArgThrArgArgPheLeu-243

a126-1**AMPHI Regions** - AMPHI

26-LeuLysGlnSerValArg-31
 73-GlyCysGlnSerValGlnGluAla-80
 112-PheGlnLeuValGluAla-117
 143-LeuAspAlaGlyCysGln-148
 150-LeuMetProTrpAlaAlaProIleGlyThrGlyLeuGlyAlaVal-164
 213-SerGlyAspProValAsnMetAlaArgAlaPhe-223

Antigenic Index - Jameson-Wolf

7-GluThrPheProSerArgLeu-13
 24-GluIleLeuLysGlnSerValArgThrAlaArg-34
 41-SerLeuArgArgAlaGlyCysGlyGlyGluAlaHisGlyGlnGlyPhe-56
 85-GlnMetAlaArgGluValPheGlu-92
 99-GluLeuIleGlyAspAspAspThrLeuGln-108
 121-LeuIleLysAspGlyPheLysValLeu-129
 141-ArgLeuLeuAspAlaGlyCys-147
 171-ValLeuArgGluArgLeuProAspThrProLeu-181
 209-AlaValSerArgSerGlyAspProValAsn-218
 228-GluSerGlyArgLeuAlaPhe-234
 237-GlyProValGluAlaArgAspLysAlaGlnAlaSerThrProThrVal-252

Hydrophilic Regions - Hopp-Woods

24-GluIleLeuLysGlnSerValArgThrAlaArg-34
 41-SerLeuArgArgAlaGlyCysGlyGlyGluAlaHis-52
 85-GlnMetAlaArgGluValPheGlu-92
 100-LeuIleGlyAspAspAspThrLeuGln-108

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171-ValLeuArgGluArgLeuProAsp-178
 210-ValSerArgSerGlyAspPro-216
 228-GluSerGlyArgLeuAlaPhe-234
 237-GlyProValGluAlaArgAspLysAlaGlnAla-247

a127**AMPHI Regions - AMPHI**

6-MetLeuAspThrTrpLeuGlyAla-13
 22-GluSerValAlaVal-26
 119-ValGlyAspTyrIleGluIle-125
 135-IleAsnLeuLeuAsnThrLeuMet-142
 147-ProAsnProLeuValGlyGlnLeuAla-155
 206-LeuGluProLeuCysAlaPro-212
 214-IleProAlaIleGlnArgHisLeuGluAsnValGln-225
 250-ArgIleIleValArgPheAlaSerProVal-259
 268-AlaValMetAspGluPheLeuArgVal-276

Antigenic Index - Jameson-Wolf

16-IleArgAlaGluAlaValGlu-22
 41-HisPheLysArgHisProAspPheGlyIleGluSerLysArgArgPheLeuVal-58
 112-SerAlaThrGlnGlnTyrSerVal-119
 126-AsnGlyLeuArgGlyArgValValAsp-134
 169-HisProValArgArgAspAsnIleLeu-177
 193-LeuAspSerAspGluAlaValCysArg-201
 233-ProAlaAlaLysProArgValThrArgValProTyrAspAspLysAlaTyr-249
 257-SerProValSerLysArgLeuGluIle-265
 283-TyrProAlaGlySerGluThrLeu-290

Hydrophilic Regions - Hopp-Woods

16-IleArgAlaGluAlaValGlu-22
 42-PheLysArgHisProAspPheGlyIleGluSerLysArgArgPheLeuVal-58
 126-AsnGlyLeuArgGlyArgValVal-133
 170-ProValArgArgAspAsnIleLeu-177
 193-LeuAspSerAspGluAlaValCysArg-201
 235-AlaLysProArgValThrArgValProTyrAspAspLysAlaTyr-249
 259-ValSerLysArgLeuGluIle-265
 285-AlaGlySerGluThrLeu-290

a128-1**AMPHI Regions - AMPHI**

43-AlaGlnThrHisThrGlyTrpAlaAsnThrValGluProLeuThrGlyIleThrGluArgValGlyArgIleT
 rpGlyValValSerHisLeuAsnSerValThrAspThrProGlu-81
 85-AlaTyrAsnGluLeuMetProGluIle-93
 102-GlnAspIleGluLeuTyrAsnArgPheLysThrIleLysAsnSerProGluPheAsp-120
 166-PheSerGlnAsnValLeuAspAlaThrAsp-175
 189-GlyIleProGluAspAla-194
 2118-HisTyrLeuAlaVal-222
 231-LeuArgGluGlnIleTyr-236
 245-GluLeuSerAspAspGlyLysPheAspAsnThrAlaAsnIleAspArgThrLeuGluAsnAlaLeu-266
 269-AlaLysLeuLeuGlyPheLysAsnTyrAlaGlu-279
 286-MetAlaAspThrProGluGlnValLeuAsnPheLeuHisAspLeuAlaArgArgAla-304
 313-AlaGluValLysAlaPhe-318
 359-GlyLysValLeuAsnGlyLeuPheAlaGlnIleLysLysLeuTyrGly-374
 425-GlyArgArgArgPhe-429
 472-LeuHisHisLeuLeuThrGlnValAspGluLeu-482
 496-GluLeuProSerGlnPhe-501
 565-GlyArgLeuLysAsnTrpGlnGlnValLeuAspSerVal-577

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584-ValArgProProGluTyrAsnArgPheAlaAsnSerPheGlyHisIlePheAlaGlyGly-603
 610-SerTyrAlaTrpAlaGlu-615
 623-AlaAlaPheGluGluSerAspAsp-630
 636-LysArgPheTrpGlnGluIleLeuAla-644
 651-AlaAlaGluSerPheLysAlaPheArg-659

Antigenic Index - Jameson-Wolf

9-LeuGlyGluGluProArgPheAspGlnIleLysThrGluAspIleLysProAlaLeu-27
 32-AlaGluAlaArgGluGlnIleAla-39
 43-AlaGlnThrHisThrGlyTrp-49
 51-AsnThrValGluProLeuThr-57
 59-IleThrGluArgValGlyArgIleTrp-67
 75-SerValThrAspThrProGluLeuArgAlaAlaTyr-86
 100-IleGlyGlnAspIleGluLeuTyrAsnArgPheLysThrIleLysAsnSerProGluPheAspThr-121
 123-SerHisAlaGlnLysThrLysLeuAsnHisAspLeuArgAsp-136
 140-SerGlyAlaGluLeuProProGluGlnGlnAlaGluLeuAlaLysLeuGlnThrGluGlyAlaGlnLeu-162
 165-LysPheSerGlnAsnVal-170
 172-AspAlaThrAspAla-176
 190-IleProGluAspAla-194
 202-AlaGlnSerGluGlyLysThrGlyTyrLys-211
 226-AlaAspAsnArgLysLeuArgGluGlnIle-235
 240-ValThrArgAlaSerGluLeuSerAspAspGlyLysPheAspAsnThrAlaAsnIleAspArgThrLeuGlu-263
 285-LysMetAlaAspThrProGluGln-292
 300-LeuAlaArgArgAlaLysProTyrAlaGluLysAspLeuAlaGlu-314
 316-LysAlaPheAlaArgGluSerLeuGly-324
 335-TyrAlaGlyGluLysLeuArgGluAlaLysTyrAlaPheSerGluThrGluValLysLys-354
 376-GlyPheThrGluLysThrVal-382
 387-LysAspValArgTyrPheGluLeuGlnGlnAsnGlyGluThrIle-401
 409-TyrAlaArgGluGlyLysArgGlyGlyAla-418
 420-MetAsnAspTyrLysGlyArgArgArgPheSerAspGlyThrLeu-434
 446-ThrProProValGlyGlyLysGluAlaArgLeuSerHisAspGlu-460
 478-GlnValAspGluLeuGlyVal-484
 496-GluLeuProSerGln-500
 516-SerAlaHisGluGluThrGlyVal-523
 560-SerGluAspAspGluGlyArgLeuLysAsn-569
 575-AspSerValArgLysGluValAlaValValArgProProGluTyrAsnArgPhe-592
 605-SerAlaGlyTyrTyrSerTyr-611
 625-PheGluGluSerAspAspValAlaAlaThrGlyLysArgPheTrp-639
 646-GlyGlySerArgSerAlaAlaGluSerPheLysAlaPheArgGlyArgGluProSerIle-665
 669-LeuArgHisSerGlyPheAspAsnAlaAla-678

Hydrophilic Regions - Hopp-Woods

9-LeuGlyGluGluProArgPheAspGlnIleLysThrGluAspIleLysPro-25
 32-AlaGluAlaArgGluGlnIleAla-39
 59-IleThrGluArgValGly-64
 77-ThrAspThrProGluLeuArgAlaAlaTyr-86
 100-IleGlyGlnAspIleGluLeu-106
 111-LysThrIleLysAsnSerProGluPheAspThr-121
 123-SerHisAlaGlnLysThrLysLeuAsnHisAspLeuArgAsp-136
 143-GluLeuProProGluGlnGlnAlaGluLeuAlaLysLeuGlnThrGluGlyAlaGlnLeu-162
 190-IleProGluAspAla-194
 202-AlaGlnSerGluGlyLysThrGlyTyr-210
 226-AlaAspAsnArgLysLeuArgGluGlnIle-235

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242-ArgAlaSerGluLeuSerAspAspGlyLysPheAspAsn-254
 256-AlaAsnIleAspArgThrLeuGlu-263
 285-LysMetAlaAspThrProGlu-291
 300-LeuAlaArgArgAlaLysProTyrAlaGluLysAspLeuAlaGlu-314
 316-LysAlaPheAlaArgGluSerLeuGly-324
 335-TyrAlaGlyGluLysLeuArgGluAlaLysTyrAlaPheSerGluThrGluValLysLys-354
 377-PheThrGluLysThr-381
 387-LysAspValArgTyr-391
 396-GlnAsnGlyGluThr-400
 409-TyrAlaArgGluGlyLysArgGlyGly-417
 423-TyrLysGlyArgArgArgPheSerAsp-431
 449-ValGlyGlyLysGluAlaArgLeuSerHisAspGlu-460
 478-GlnValAspGluLeuGly-483
 516-SerAlaHisGluGluThrGly-522
 560-SerGluAspAspGluGlyArgLeuLysAsn-569
 575-AspSerValArgLysGluValAlaVal-583
 585-ArgProProGluTyrAsnArg-591
 625-PheGluGluSerAspAspValAlaAlaThrGly-635
 647-GlySerArgSerAlaAlaGluSerPheLysAlaPheArgGlyArgGluProSerIle-665

a130**AMPHI Regions - AMPHI**

16-ThrLeuValSerGlyIle-21
 36-GlySerGlySerPheGly-41
 56-GlnProValGlyGlnLeu-61
 91-AsnValProAsnAlaPro-96
 110-GlnGlyPheAspThrLeuPheGlnHisAlaLeuAsnGlyPheAsnAlaMet-126
 171-ThrAlaSerAlaPro-175
 204-PheGluAlaThrCysGln-209
 211-CysHisGlyGlySerIleProGlyIlePro-220
 234-LysGlyLysGluThr-238
 245-GluGlyPheAsnAlaMet-250

Antigenic Index - Jameson-Wolf

1-MetLysGlnLeuArgAspAsnLysAlaGlnGlySer-12
 35-AlaGlySerGlySerPheGlyAspValAspAlaThrThrGluAlaAlaThrGlnThrArgIleGlnProValGly-59
 63-MetGlyAspGlyIleProValGlyGluArgGlnGlyGlu-75
 87-AlaAlaAspSerAsnValProAsnAlaProLysLeuGluHisAsnGlyAspTrpAla-105
 108-IleAlaGlnGlyPhe-112
 126-MetProAlaLysGlyGlyAla-132
 134-AspLeuThrAspGlnGluLeuLysArg-142
 148-AlaAsnLysSerGlyGlySerPheProAsnProAspGluAlaAlaProAlaAspAsnAlaAlaSerGlyThrAlaSerAlaProAlaAspSerAlaAlaProAlaGluAlaLysAlaGluAspLysGlyAlaAla-192
 197-GlyValAspGlyLysLysValPheGlu-205
 221-GlyIleGlyLysLysAspAspTrpAlaProArgIleLysLysGlyLysGluThrLeuHis-240
 251-ProAlaLysGlyGlyAsnAlaGlyLeuSerAspAspGluValLysAla-266
 274-GlnSerGlyAlaLys-278

Hydrophilic Regions - Hopp-Woods

1-MetLysGlnLeuArgAspAsnLysAlaGlnGly-11
 41-GlyAspValAspAlaThrThrGluAlaAlaThr-51
 68-ProValGlyGluArgGlnGlyGlu-75
 87-AlaAlaAspSerAsnVal-92
 96-ProLysLeuGluHisAsnGly-102
 127-ProAlaLysGlyGlyAla-132

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134-AspLeuThrAspGlnGluLeuLysArg-142
 156-ProAsnProAspGluAlaAlaProAlaAspAsnAlaAla-168
 174-AlaProAlaAspSerAlaAlaProAlaGluAlaLysAlaGluAspLysGlyAlaAla-192
 198-ValAspGlyLysLysValPheGlu-205
 222-IleGlyLysLysAspAspTrpAlaProArgIleLysLysGlyLysGluThrLeuHis-240
 251-ProAlaLysGlyGlyAsn-256
 258-GlyLeuSerAspAspGluValLysAla-266

a132-2**AMPHI Regions** - AMPHI

13-IleIleSerAlaLeuAlaVal-19
 70-AlaThrCysMetAlaMetVal-76
 92-ValGlnGlnThrGlnGlnAlaProLysProValSerAsnThr-105

Antigenic Index - Jameson-Wolf

26-GlnHisGlyLysGlyAlaAspAla-33
 38-GlySerGlySerGlySerAla-44
 81-HisThrThrLysHisGlyLeuAspPhe-89
 91-AsnValGlnGlnThrGlnGlnAlaProLysProValSerAsnThrGluProSerAlaProValProGlnGlnGlnLys-116

Hydrophilic Regions - Hopp-Woods

28-GlyLysGlyAlaAspAla-33
 97-GlnAlaProLysProValSerAsnThrGluProSerAla-109

a134**AMPHI Regions** - AMPHI

39-IleGlnSerAlaGlyThrVal-45
 47-GlyLysLysThrGly-51
 56-SerAspTrpMetAspIleGluLysGlnArg-65
 83-ValAsnLeuLeuAspThrProGlyHis-91
 97-AspThrTyrArgValLeuThrAlaVal-105
 114-AlaAlaLysGlyValGlu-119
 123-IleLysLeuLeuAsnValCysArg-130
 142-LysTyrAspArgGluVal-147
 149-AspSerLeuGluLeuLeuAspGluValGluAsnIleLeuGln-162
 176-LysAsnPheLysGlyValTyrHisIleLeu-185
 201-HisGluPheAspIleIleLysGlyIleAspAsn-211
 254-PheGlySerAlaIle-258
 265-GluIleLeuAsnSerLeuIleGluTrpAla-274
 322-LysPheGluArgGlyMetLys-328
 361-AspIleIleGlyIleProAsnHis-368
 377-PheSerGluGlyGlu-381
 395-LeuPheArgSerValArgIleLys-402
 404-ProLeuLysIleLysGln-409
 411-GlnLysGlyLeuGlnGlnLeuGlyGlu-419
 423-ValGlnValPheLysProMetSer-430
 449-SerArgLeuAlaAsnGluTyr-455
 481-AlaGluPheGluLysAlaAsn-487
 515-ArgTrpProAspIle-519

Antigenic Index - Jameson-Wolf

4-GluIleLeuAspGlnValArgArgArgThrPhe-15
 19-SerHisProAspAlaGlyLysThrThrLeuThr-29
 43-GlyThrValLysGlyLysLysThrGlyLysPheAlaThr-55
 57-AspTrpMetAspIleGluLysGlnArgGly-66
 76-PheAspTyrLysAspHisThrVal-83

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85-LeuLeuAspThrProGlyHisGlnAspPheSerGluAspThrTyrArg-100
 113-AspAlaAlaLysGlyValGlu-119
 129-CysArgLeuArgAsnThrPro-135
 140-MetAsnLysTyrAspArgGluValArgAspSerLeuGluLeuLeuAspGluValGluAsn-159
 173-GlyMetGlyLysAsnPheLys-179
 194-AlaGlyGlyGluArgLeuProHis-201
 207-LysGlyIleAspAsnProGluLeuGluGlnArgPheProLeu-220
 223-GlnGlnLeuArgAspGluIleGluLeu-231
 235-AlaSerAsnGluPheAsnLeu-241
 275-ProAlaProLysProArgAspAlaThrValArgMetValGluProAspGluProLysPhe-294
 302-GlnAlaAsnMetAspProLysHisArgAspArgIleAla-314
 317-ArgValCysSerGlyLysPheGluArgGlyMetLysMetLysHisLeuArgIleAsnArgGluIleAla-339
 348-SerHisAspArgGluLeuValGlu-355
 365-IleProAsnHisGly-369
 373-IleGlyAspSerPheSerGluGlyGluGln-382
 399-ValArgIleLysAsnProLeuLysIleLysGlnLeuGlnLysGlyLeuGlnGlnLeuGlyGluGlyAla-422
 450-ArgLeuAlaAsnGluTyrGlyVal-457
 473-SerCysAspAspLysLysLysLeuAlaGluPheGluLysAlaAsnAla-488
 503-AlaProAsnArgValAsnLeu-509
 511-LeuThrGlnGluArgTrpProAspIleVal-520
 523-GluThrArgGluHisSerVal-529

Hydrophilic Regions - Hopp-Woods

4-GluIleLeuAspGlnValArgArgArgArgThr-14
 21-ProAspAlaGlyLys-25
 43-GlyThrValLysGlyLysLysThrGlyLys-52
 59-MetAspIleGluLysGlnArgGly-66
 77-AspTyrLysAspHisThr-82
 92-GlnAspPheSerGluAspThrTyr-99
 113-AspAlaAlaLysGlyValGlu-119
 129-CysArgLeuArgAsn-133
 142-LysTyrAspArgGluValArgAspSerLeuGluLeuLeuAspGluValGluAsn-159
 194-AlaGlyGlyGluArgLeuProHis-201
 207-LysGlyIleAspAsnProGluLeuGluGlnArgPheProLeu-220
 223-GlnGlnLeuArgAspGluIleGluLeu-231
 277-ProLysProArgAspAlaThrValArgMetValGluProAspGluProLysPhe-294
 305-MetAspProLysHisArgAspArgIleAla-314
 319-CysSerGlyLysPheGluArgGlyMetLysMetLysHisLeuArgIleAsnArgGluIleAla-339
 348-SerHisAspArgGluLeuValGlu-355
 376-SerPheSerGluGlyGluGln-382
 399-ValArgIleLysAsnProLeuLysIleLysGlnLeuGlnLysGlyLeu-414
 417-LeuGlyGluGluGlyAla-422
 473-SerCysAspAspLysLysLysLeuAlaGluPheGluLysAlaAsnAla-488
 512-ThrGlnGluArgTrpPro-517
 523-GluThrArgGluHisSerVal-529

a135**AMPHI Regions - AMPHI**

29-ThrIleThrArgGlnLeuAlaAlaLeu-37
 85-GluTyrThrAlaAsnLeu-90
 169-AspIleAspGlyLeuTyrThr-175
 185-ValArgLeuAspLysIleGluHis-192
 212-GlyMetLeuThrLysIle-217
 236-LeuLysProAspAla-240

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242-AlaGluAlaAlaAspAsnGln-248
 284-AlaGluHisAlaLeuSer-289
 300-IleAlaGlyIleGluGly-305
 308-SerArgMetAspThrValThrValTyr-316
 318-LysAlaThrLysGlnPro-323
 335-AlaAlaGluAspLeuLeuLysLeuArg-343

Antigenic Index - Jameson-Wolf

1-MetLysTyrLysArgIleVal-7
 11-GlyThrSerSerIleThrHisSerAspGlySerLeuSerArgGlyLysIle-27
 60-GlyPheLysLysArgProValLysIleAlaAspLysGlnAlaSer-74
 90-LeuSerSerAspGlyIle-95
 105-AlaAspPheAlaAspLysArgArgTyrGlnAsnAlaGlyGly-118
 124-LeuGlnArgArgAlaVal-129
 132-IleAsnGluAsnAspThrValSerValGluGluLeuLysIleGlyAspAsnAspThrLeu-151
 176-GlyAsnProAsnSerAsnProAspAlaValArgLeuAspLysIleGluHisIleAsn-194
 202-GlyGlySerGlySerAlaAsnGlyThrGly-211
 215-ThrLysIleLysAla-219
 224-ThrGluSerGlyVal-228
 233-CysSerSerLeuLysProAspAlaLeuAlaGluAlaAlaAspAsnGlnAlaAspGly-251
 257-ArgAlaLysGlyLeuArgThrGlnLysGln-266
 271-TyrSerGluSerArgGlyGlyValTyrValAspGluGlyAlaGluHisAlaLeuSerGluGlnGlyLysSer
 LeuLeu-296
 305-GlyHisPheSerArgMetAspThr-312
 317-SerLysAlaThrLysGlnProLeuGlyLysGlyArgVal-329
 335-AlaAlaGluAspLeuLeuLysLeuArgLysAlaLys-346
 350-IleHisArgAspAspTrpIleSer-357

Hydrophilic Regions - Hopp-Woods

1-MetLysTyrLysArgIleVal-7
 16-ThrHisSerAspGlySerLeuSerArgGlyLysIle-27
 60-GlyPheLysLysArgProValLysIleAlaAspLysGlnAlaSer-74
 105-AlaAspPheAlaAspLysArgArgTyrGlnAsn-115
 124-LeuGlnArgArgAlaVal-129
 133-AsnGluAsnAspThrValSerValGluGluLeuLysIleGlyAspAsnAspThrLeu-151
 178-ProAsnSerAsnProAspAlaValArgLeuAspLysIleGluHisIleAsn-194
 215-ThrLysIleLysAla-219
 236-LeuLysProAspAlaLeuAlaGluAlaAlaAspAsnGlnAlaAsp-250
 257-ArgAlaLysGlyLeuArgThrGlnLys-265
 272-SerGluSerArgGly-276
 278-ValTyrValAspGluGlyAlaGluHisAlaLeuSerGluGlnGlyLys-293
 306-HisPheSerArgMetAspThr-312
 318-LysAlaThrLysGlnProLeuGlyLysGlyArgVal-329
 335-AlaAlaGluAspLeuLeuLysLeuArgLysAlaLys-346
 351-HisArgAspAspTrp-355

a136**AMPHI Regions** - AMPHI

50-IleArgGlnCysIleArgGln-56
 84-GlnCysHisAspGlyIleLysGlnLeuPheLysArgPheIleIleAspGlyPheLysProIleGlyArgHis-
 107
 119-CysValLysIleAla-123
 148-ArgHisCysGlnAsn-152
 170-GlnHisPheGlyGlnPro-175
 177-GluArgCysGlnPheVal-182
 194-AsnLeuValAlaThr-198

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210-GlnPheAlaGlnPro-214
 216-PheGlyCysPheGlyLysPheSerGlyIleHisHisPhe-228
 247-LysAlaThrLysProGlnThrValGlnIleValArg-258

Antigenic Index - Jameson-Wolf

1-MetGluThrAsnAla-5
 34-AlaAspGlyLeuArgLeuValAspAspArgLeuProVal-46
 48-ValAspIleArgGlnCysIle-54
 69-LeuGlnThrAspSer-73
 84-GlnCysHisAspGlyIleLysGlnLeuPhe-93
 99-AspGlyPheLysProIleGlyArgHisAsnIle-109
 139-IleArgHisArgGlyGlyCysPheHisArgHisCysGlnAsnGlnProPheAsp-156
 159-ThrPheGlyGlyGlyLysLeuArg-166
 171-HisPheGlyGlnProValGluArg-178
 184-ProAlaGlnGlnArgArgHisLysThr-192
 214-ProProPheGlyCysPheGlyLysPheSerGly-224
 242-AsnLeuAsnGlnAspLysAlaThrLysProGln-252
 257-ValArgGlnGlyGluAlaThrProTyr-265
 270-AsnProLeuTyrArgArgAsnAlaVal-278

Hydrophilic Regions - Hopp-Woods

35-AspGlyLeuArgLeuValAspAspArgLeuProVal-46
 48-ValAspIleArgGlnCysIle-54
 87-AspGlyIleLysGlnLeuPhe-93
 185-AlaGlnGlnArgArgHisLysThr-192
 244-AsnGlnAspLysAlaThrLysProGln-252
 273-TyrArgArgAsnAlaVal-278

a137**AMPHI Regions** - AMPHI

24-LeuSerTyrIleLeuGlyPhe-30
 49-ThrLysGluSerLeu-53
 55-AspPheLeuThrTrpGly-60
 78-PheSerAspTyrLeuAlaHisProLeuAspIlePheLysValTrpGluGlyGly-95
 101-GlyPheLeuGlyValValIle-107
 120-PheLeuLysLeuMetAspThrValAlaProLeuValPro-132
 139-ArgIleGlyAsnPheIle-144
 149-TrpGlyArgValThrAspIleAsnAlaPhe-158
 178-ProLeuTrpAlaGluTrpLeuGlnGlnTyr-187
 190-LeuProArgHisProSerGlnLeu-197
 232-TyrGlyIlePheArgPheIleAlaGluPheAlaArgGlnProAspAspTyrLeuGly-250

Antigenic Index - Jameson-Wolf

36-LeuGlyArgArgArgIleAlaGln-43
 48-PheThrLysGluSerLeuAspAsp-55
 92-TrpGluGlyGlyMet-96
 113-GlyArgLysHisGlyIle-118
 136-AlaSerGlyArgIle-140
 164-ProGlnAlaArgTyrGluAspLeuGluAla-173
 191-ProArgHisProSerGlnLeu-197
 214-PheSerLysLysGlnArgProThrGly-222
 241-PheAlaArgGlnProAspAspTyrLeu-249
 277-PheGlyMetLysLysGlnHis-283

Hydrophilic Regions - Hopp-Woods

37-GlyArgArgArgIleAla-42

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48-PheThrLysGluSerLeuAsp-54
166-AlaArgTyrGluAspLeuGluAla-173
216-LysLysGlnArgProThrGly-222
241-PheAlaArgGlnProAspAspTyr-248
278-GlyMetLysLysGlnHis-283

a138**AMPHI Regions - AMPHI**

21-ProTyrIleArgArgPheSerGlySer-29
74-AsnAlaMetLeuGluLysVal-80
85-GluPheValGlnGlyMet-90
109-ValAsnLysGluIleValSerMetIleAsnThrTyrGly-121
152-IleGlyGlnValGlyThrValGluSerIle-161
163-ThrGlyLeuValLysGlyLeu-169
199-GlyLysLeuAlaGluGluLeu-205
213-MetThrAsnIleAlaGlyValMetAspLysThrGlyAsnLeuLeuThrLysLeuThr-231
234-ArgIleAspGluLeuIle-239
247-GlyMetLeuProLysIleAlaSerAlaValGluAlaAlaValAsn-261
276-AlaLeuLeuLeuGluIlePheThrAspAla-285

Antigenic Index - Jameson-Wolf

1-MetGluSerGluAsnIle-6
9-AlaAlaAspLysAlaArgIleLeu-16
23-IleArgArgPheSerGlySer-29
35-TyrGlyGlyAsnAlaMetThr-41
43-ProAlaLeuLysGluGlyPheAla-50
68-GlyGlyGlyProGln-72
76-MetLeuGluLysValGlyLysLysGlyGluPhe-86
91-ArgValThrAspLysGluAlaMetAsp-99
109-ValAsnLysGluIle-113
128-SerGlyArgAspAspHisPheIleLysAlaLysLysLeuLeuIleAspThrProGluGlnAsnGlyValAsp
IleGlyGln-154
159-GluSerIleAspThrGlyLeu-165
169-LeuIleGluArgGlyCysIle-175
182-GlyValGlyGluLysGlyGluAla-189
200-LysLeuAlaGluGluLeuAsnAlaGluLys-209
219-ValMetAspLysThrGlyAsnLeuLeuThrLysLeuThrProLysArgIleAspGluLeuIleAla-240
259-AlaValAsnGlyValLys-264
269-IleAspGlyArgValProAsnAla-276
292-LeuGlyGlyGlyGluAspAla-298

Hydrophilic Regions - Hopp-Woods

1-MetGluSerGluAsn-5
9-AlaAlaAspLysAlaArgIleLeu-16
43-ProAlaLeuLysGluGlyPheAla-50
76-MetLeuGluLysValGlyLysLysGlyGluPhe-86
91-ArgValThrAspLysGluAlaMetAsp-99
109-ValAsnLysGluIle-113
128-SerGlyArgAspAspHisPheIleLysAlaLysLysLeuLeuIleAspThrProGluGlnAsnGlyValAsp
-151
183-ValGlyGluLysGlyGluAla-189
200-LysLeuAlaGluGluLeuAsnAlaGluLys-209
219-ValMetAspLysThrGly-224
230-LeuThrProLysArgIleAspGluLeuIleAla-240
269-IleAspGlyArgVal-273
294-GlyGlyGluAspAla-298

a140**AMPHI Regions - AMPHI**

10-TyrLeuAsnArgThr-14
 26-IleGlyArgAspTyrSerPhePhe-33
 45-SerLeuAspSerValGluLysThrAlaGly-54
 68-AsnAlaAlaArgThrAlaSer-74
 108-SerAlaThrProGluThrValGluThrAlaAla-118
 135-ArgAlaAlaAlaAlaValGlnHisAlaAsnAlaAlaAspGlyValArgIlePheAsnAsnLeuAlaAlaThrVal-159
 175-LeuLysAlaValSerAspGlyLeuAsp-183
 189-LeuArgValIleAlaGln-194
 254-SerLeuPheAlaGly-258
 266-IleGlyTyrLeuLysGlyLeuPheSerTyr-275
 290-GluHisAlaGluGlySer-295
 303-LeuGlyAlaLeuGly-307
 352-GlyThrLeuValGlyLeu-357
 391-GlyGlyPheThrGlyAlaThr-397
 412-ArgLeuValAlaGlyLeu-417
 425-AsnGlyTrpAsnGlyLeuAlaArg-432

Antigenic Index - Jameson-Wolf

2-SerAlaGlyGlyLysGlyAlaGlyTyrLeuAsnArgThrGlyGlnArgValPro-19
 25-LysIleGlyArgAspTyrSer-31
 35-AsnIleGluThrAspGlyGlyLeu-42
 47-AspSerValGluLysThrAlaGlySerGluGlyAspThrLeu-60
 63-TyrValArgArgGlyAsnAlaAlaArgThrAlaSer-74
 86-HisAlaValGluGlnGlyGlySerAsnLeuGlu-96
 102-LeuAspAlaSerGluSerSerAlaThrProGluThrValGlu-115
 117-AlaAlaAlaAspArgThrAspMetProGlyIleArgProTyrGly-131
 144-AsnAlaAlaAspGly-148
 160-TyrAlaAspSerThrAlaAla-166
 169-AspMetGlnGlyArgArgLeuLysAlaValSerAspGlyLeuAspHisAsnAlaThrGly-188
 195-ThrGlnGlnAspGlyGlyThrTrpGluGlnGlyGlyValGluGlyLysMetArgGlySerThrGln-216
 221-AlaAlaLysThrGlyGluAsnThrThr-229
 240-ThrTrpSerGluAsnSerAlaAsnAlaLysThrAspSer-252
 259-IleArgHisAspAlaGlyAsp-265
 274-SerTyrGlyArgTyrLysAsnSerIleSerArgSerThrGlyAlaAspGluHisAlaGluGlySerValAsn-297
 315-AlaThrGlyAspLeuThrValGluGlyGlyLeuArg-326
 333-AspAlaPheAlaGluLysGlySerAlaLeuGlyTrpSerGlyAsnSerIleThrGluGlyThr-353
 362-LeuSerGlnProLeuSerAspLysAla-370
 377-GlyValGluArgAspLeuAsnGlyArgAspTyrThrVal-389
 399-AlaThrGlyLysThrGlyAlaArgAsnMetProHisThr-411
 421-ValGluPheGlyAsnGlyTrp-427
 434-SerTyrAlaGlySerLysGlnTyrGlyAsnHisSerGlyArgValGlyVal-450

Hydrophilic Regions - Hopp-Woods

3-AlaGlyGlyLysGly-7
 36-IleGluThrAspGly-40
 47-AspSerValGluLysThrAlaGlySerGluGlyAspThr-59
 64-ValArgArgGlyAsnAlaAlaArgThrAlaSer-74
 86-HisAlaValGluGlnGlyGlySerAsnLeu-95
 102-LeuAspAlaSerGluSerSerAlaThrProGluThrValGlu-115
 117-AlaAlaAlaAspArgThrAspMetProGly-126
 144-AsnAlaAlaAspGly-148

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169-AspMetGlnGlyArgArgLeuLysAlaValSerAspGlyLeuAspHisAsnAlaThr-187
 205-GlyGlyValGluGlyLysMetArgGlySerThr-215
 223-LysThrGlyGluAsnThrThr-229
 244-AsnSerAlaAsnAlaLysThrAspSer-252
 259-IleArgHisAspAlaGlyAsp-265
 277-ArgTyrLysAsnSerIleSerArgSerThrGlyAlaAspGluHisAlaGluGlySerVal-296
 333-AspAlaPheAlaGluLysGlySer-340
 364-GlnProLeuSerAspLysAla-370
 377-GlyValGluArgAspLeuAsnGlyArgAspTyrThr-388
 399-AlaThrGlyLysThrGlyAlaArgAsnMetPro-409

a141**AMPHI Regions - AMPHI**

11-GlnSerSerThrMetArgProIleGlyGluIle-21
 32-IleGluProTyrGly-36
 44-ProAlaGluAlaPheLysLeuPro-51
 80-AlaAspAlaLeuArgHisIle-86
 131-PheHisAlaIleGlyAla-136
 139-AsnLeuLeuAlaAlaMetLeuAspAsn-147
 174-GlnLeuArgAsnIleIleAspGlyMetGlyLysProValAspGlyValMetArgPro-192
 212-AspIleSerAspLeuLysGluArgLeuGly-221

 245-MetAlaAlaLeuLeuLysAspAlaIleLysProAsnLeu-257

 259-GlnThrIleGluGlyThrPro-265
 272-ProPheAlaAsnIleAlaHisGlyCysAsnSerValThrAlaThrArgLeuAlaLysHisLeuAlaAspTyr
 Ala-296
 330-AlaThrValArgAla-334
 351-LeuAspAlaLeuGluLysGlyLeuProAsnLeuLeuLysHisIleSerAsnLeuLysAsnValPheGly-37
 3
 406-SerLeuThrGluValTrpGlyLys-413
 420-AspLeuAlaArgLysValValAsnAlaIleGluSerGln-432
 473-IleAlaSerLeuGluLys-478
 525-ValAlaLeuCysGlyAsnMetMetLysMetProGlyLeuProLysValProAlaAla-543

Antigenic Index - Jameson-Wolf

3-PheLysThrAspAlaGluIleAlaGlnSerSerThrMetArgProIleGly-19

 27-LeuAsnValAspAsnIleGluProTyrGly-36

 38-TyrLysAlaLysIleAsnProAlaGluAlaPheLysLeuProGlnLysGlnGlyArg-56
 64-AsnProThrProAlaGlyGluGlyLysThrThr-74
 81-AspAlaLeuArgHisIleGlyLysAspSerValIleAlaLeuArgGluProSerLeuGlyPro-101
 105-ValLysGlyGlyAlaAlaGlyGlyGly-113
 151-GlnGlyAsnGluLeuAsnIleAspProLysArgValLeuTrp-164

 166-ArgValValAspMetAsnAspArgGlnLeuArgAsnIleIleAspGlyMetGlyLysProValAspGlyVal
 MetArgProAspGlyPheAspIle-197
 211-LysAspIleSerAspLeuLysGluArgLeuGly-221
 227-TyrAlaLysAspGlySerProValTyr-235

 237-LysAspLeuLysAlaAsnGly-243
 251-AspAlaIleLysProAsnLeu-257
 287-ArgLeuAlaLysHisLeuAla-293
 306-LeuGlyAlaGluLysPheCysAspIleLysCysArgLeuAlaGlyLeuLysProAspAla-325

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335-LeuLysTyrAsnGlyGlyValGluArgAlaAsnLeuGlyGluGluAsnLeuAspAlaLeuGluLysGlyLeu
ProAsnLeu-361

383-PheValSerAspSerAspAlaGluLeuAlaMetIleGluLysAlaCysAla-399

411-TrpGlyLysGlyGlyAlaGlyGlyAlaAspLeuAlaArgLysValValAsn-427

429-IleGluSerGlnThrAsnAsnPheGly-437

444-LeuGlyIleLysAspLysIleArgAlaIleAla-454

458-TyrGlyAlaGluAspValAspPheSerAla-467

474-AlaSerLeuGluLysLeuGlyLeuAspLysMetPro-485

494-SerLeuSerAspAsnAlaLysLeu-501

503-GlyCysProGluAspPheArgIle-510

534-MetProGlyLeuPro-538

541-ProAlaAlaGluLysIleAspValAspAlaGluGly-552

Hydrophilic Regions - Hopp-Woods

3-PheLysThrAspAlaGluIleAlaGln-11

38-TyrLysAlaLysIleAsnPro-44

46-GluAlaPheLysLeuProGlnLysGlnGlyArg-56

67-ProAlaGlyGluGlyLysThr-73

81-AspAlaLeuArgHisIleGlyLysAspSerValIleAlaLeuArgGluProSer-98

155-LeuAsnIleAspProLysArgValLeuTrp-164

166-ArgValValAspMetAsnAspArgGlnLeuArgAsnIleIle-179

181-GlyMetGlyLysProValAspGlyValMetArgProAspGlyPhe-195

211-LysAspIleSerAspLeuLysGluArgLeuGly-221

228-AlaLysAspGlySer-232

237-LysAspLeuLysAla-241

287-ArgLeuAlaLysHisLeuAla-293

306-LeuGlyAlaGluLysPheCysAspIleLysCysArgLeuAlaGlyLeuLysProAspAla-325

339-GlyGlyValGluArgAlaAsnLeuGlyGluGluAsnLeuAspAlaLeuGluLysGlyLeu-358

383-PheValSerAspSerAspAlaGluLeuAlaMetIleGluLysAlaCysAla-399

420-AspLeuAlaArgLysValValAsn-427

444-LeuGlyIleLysAspLysIleArgAlaIleAla-454

458-TyrGlyAlaGluAspValAspPheSerAla-467

474-AlaSerLeuGluLysLeuGlyLeuAspLysMetPro-485

503-GlyCysProGluAspPheArgIle-510

541-ProAlaAlaGluLysIleAspValAspAlaGluGly-552

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AMPHI Regions - AMPHI

26-ArgPheAlaAlaMetProAspValValGlyLys-36

44-GlyGlnProGlyLysMetPhe-50

100-AlaValThrProCysArg-105

107-ValCysArgAspAspMetAsn-113

118-GlyCysHisArgIleThrGluArgSerLeuLysSerPheLeuGlnIleArgHisPheSerProLeu-139

174-LeuArgValGlnArgIleLeuAspPheGlyLysPheCysGlnGlnVal-189

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202-LeuAspSerValValThrLeuValHisPhePheAlaAspPheLeuIle-217
 239-AlaAspAsnGlnThrArgPhePheLysAlaGly-249
 259-AsnAlaArgLeuIleArgGlnIleLeuLys-268

Antigenic Index - Jameson-Wolf

31-ProAspValValGly-35
 38-LeuPheGlyArgGlnAlaGlyGlnProGlyLysMet-49
 59-GlnArgIleAspAlaGluAlaAlaValPheArgGlnAspArgAsnAspSerArgThrProValAspAlaGlnHisHisGlyArgArgLeuValArgAsnArgArgAsnArgArgHisCysAsnAla-100
 102-ThrProCysArgThrValCysArgAspAspMetAsnAlaCysArgThrGlyCysHisArgIleThrGluArgSerLeuLys-128
 147-AlaAlaHisLysAla-151
 153-ProMetCysSerSerSerAspSerLysSerArgArgSerAspIleSerAlaArgTyr-171
 180-LeuAspPheGlyLysPheCys-186
 225-GlnLeuGlnLysAsnThrSer-231
 237-PheGlnAlaAspAsnGlnThrArgPhePheLysAlaGlyGlnAspThrGlyGlnAlaGlyAlaGlnAsn-259
 267-LeuLysValGlnArgAlaValPheArgGlnLysThrAspAsnProPro-282
 291-IleGlnAsnArgProGluLeuGlyHisGlnGly-301
 307-GlnThrAspIleAspArgArgMetPhe-315

Hydrophilic Regions - Hopp-Woods

42-GlnAlaGlyGlnPro-46
 59-GlnArgIleAspAlaGluAlaAlaValPheArgGlnAspArgAsnAspSerArgThrProValAspAlaGlnHisHisGlyArgArgLeuValArgAsnArgArgAsnArgArgHisCys-98
 106-ThrValCysArgAspAspMetAsnAlaCysArg-116
 121-ArgIleThrGluArgSerLeuLys-128
 147-AlaAlaHisLysAla-151
 156-SerSerSerAspSerLysSerArgArgSerAspIleSerAla-169
 237-PheGlnAlaAspAsnGlnThrArgPhePheLysAlaGlyGlnAspThrGlyGln-254
 267-LeuLysValGlnArgAlaValPheArgGlnLysThrAspAsn-280
 291-IleGlnAsnArgProGluLeuGly-298
 309-AspIleAspArgArgMetPhe-315

a144**AMPHI Regions - AMPHI**

36-LeuGlyGlyIleValGlnGluPhe-43
 45-ValLeuAlaAspGlyValArg-51
 71-IleAsnLysGlnIleGlyArgValAlaGlyArg-81
 136-ValGlyArgArgLeu-140
 159-TyrArgTyrLeuSerArgHis-165
 185-GlyProAlaArgCysGlySerAlaTyrSerAlaGly-196
 200-SerGlyArgCysArgLysThrAlaArgLeuAsnGlyPheArgArgProArgSer-217

Antigenic Index - Jameson-Wolf

1-MetSerAspThrProAlaThrArgAspPheGlyLeuIleAspGlyArgAla-17
 23-LeuSerAsnArgArgGlyThrArg-30
 48-AspGlyValArgGlu-52
 58-PheAspAspAlaAlaSerTyrAlaAspAsnProPheGlnIleAsn-72
 78-ValAlaGlyArgIleArgGlyAlaAla-86
 88-AspIleAsnGlyArgThrTyrArgValGluAlaAsnGluGlyArgAsnAlaLeuHisGlyGlySerHis-110
 121-AlaAlaAspGlyArgSerValValLeu-129
 135-ThrValGlyArgArgLeuSerGlnArgPheGly-145
 151-ProLeuGlyArgGlyArgProAlaTyr-159
 161-TyrLeuSerArgHisArgAlaArgArgHisGlyValArgProAspAlaAlaHis-178
 182-AlaGlyArgGlyProAlaArgCysGlySer-191

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194-SerAlaGlyArgThrTyrSerGlyArgCysArgLysThrAlaArgLeuAsnGlyPheArgArgProArgSer
Ile-218

Hydrophilic Regions - Hopp-Woods

1-MetSerAspThrProAlaThrArgAsp-9
24-SerAsnArgArgGlyThrArg-30
48-AspGlyValArgGlu-52
58-PheAspAspAlaAlaSer-63
78-ValAlaGlyArgIleArgGlyAlaAla-86
89-IleAsnGlyArgThrTyrArgValGluAlaAsnGluGlyArgAsnAlaLeu-105
121-AlaAlaAspGlyArgSerValValLeu-129
135-ThrValGlyArgArgLeuSerGln-142
153-GlyArgGlyArgProAla-158
163-SerArgHisArgAlaArgArgHisGlyValArgProAspAla-176
183-GlyArgGlyProAlaArgCys-189
197-ArgThrTyrSerGlyArgCysArgLysThrAlaArg-208
210-AsnGlyPheArgArgProArgSerIle-218

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AMPHI Regions - AMPHI

19-GluGlnTyrGlyLeuPheAspPheMetProCys-29
34-ProLeuAspAsnPheProThrVal-41
64-GlyPheGlyGlnArgIleSerAsnLeuSerArg-74
95-LeuArgAlaCysAla-99
105-HisValArgValPheGlnLys-111
140-ThrArgArgValArg-144
158-ArgHisGlnArgGlyPheAlaArg-165

Antigenic Index - Jameson-Wolf

6-LeuArgProArgGlnValIleIleAspHisAspLysIleGluGln-20
29-CysLeuArgGlnProProLeuAspAsn-37
41-ValArgProAlaSerValGluThrArgSerLysHisIleGluArgArgArgGlnAspLysAspAlaAspGlyP
heGlyGlnArgIleSerAsnLeuSer-73
86-ThrCysArgArgGlnArgIleHisThr-94
112-SerLeuLeuArgAspLysArgLeuLys-120
138-ArgArgThrArgArgValArgHisGlyAsnAlaGln-149
155-GlnGlnProArgHisGlnArgGlyPheAla-164
166-AlaGlySerGlyArgAsnAspLysAspValAlaPheSerIle-179
195-GlnArgThrProGlyPhe-200

Hydrophilic Regions - Hopp-Woods

6-LeuArgProArgGlnValIleIleAspHisAspLysIleGluGln-20
44-AlaSerValGluThrArgSerLysHisIleGluArgArgArgGlnAspLysAspAlaAspGlyPheGly-66
86-ThrCysArgArgGlnArgIleHisThr-94
112-SerLeuLeuArgAspLysArgLeuLys-120
138-ArgArgThrArgArgValArgHisGlyAsn-147
156-GlnProArgHisGlnArgGlyPheAla-164
167-GlySerGlyArgAsnAspLysAspValAla-176

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AMPHI Regions - AMPHI

25-AlaAspLysIleArgLysIleGluAsnTrpPro-35
49-GlnSerAlaGluTyrPheArgLeuLeuValAspLeu-60
150-AlaGlyLeuGluLeuIleArgLysLeuGlyGlyGluIle-162
165-AlaAlaAlaIleLeuGluPheThrAspLeuGlnGlyGlyLysAsnIleArg-181

Antigenic Index - Jameson-Wolf

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4-LysThrSerAsnLeu-8
 24-LeuAlaAspLysIleArgLysIleGluAsnTrpProGlnLysGly-38
 66-MetAspGlnLysIleAspIle-72
 76-LeuAspAlaArgGly-80
 97-ProIleArgLysLysGlyLysLeuPro-105
 117-TyrGlyGluAlaAlaVal-122
 124-IleHisThrAspAlaValLysLeuGlySer-133
 153-GluLeuIleArgLysLeuGlyGlyGluIleValGlu-164
 172-ThrAspLeuGlnGlyGlyLysAsnIleArgAlaSerGlyAlaPro-186
 192-GlnAsnGluGlyCysMetLysGly-199

Hydrophilic Regions - Hopp-Woods

24-LeuAlaAspLysIleArgLysIleGluAsnTrpPro-35
 66-MetAspGlnLysIleAspIle-72
 97-ProIleArgLysLysGlyLysLeuPro-105
 117-TyrGlyGluAlaAlaVal-122
 124-IleHisThrAspAlaValLysLeuGlySer-133
 153-GluLeuIleArgLysLeuGlyGlyGluIleValGlu-164
 178-LysAsnIleArgAlaSerGly-184
 195-GlyCysMetLysGly-199

a149**AMPHI Regions - AMPHI**

72-AsnLeuGlyAspAlaLeuAspGlyValProGlyIle-83
 101-ThrGlyArgArgIleLysValLeuAsnHisHisGlyGluThrGlyAspMet-117
 135-GlnValGluIleLeuArgGlyProValThr-144
 152-ValAlaGlyLeuValAsp-157
 164-ProGluLysMetProGluAsnGlyVal-172
 184-AsnLeuGluLysLeu-188
 220-TyrArgAsnLeuLysArgLeuProAspSerHis-230
 345-PheProGlyPheGlu-349
 366-AlaGlyAspAlaValGluAsnPhePheAsnAsn-376
 389-ProIleGlyArgLeuLys-394
 411-AlaThrSerGluAla-415
 565-ArgPheGlyAsnTyrIleTyrAlaGln-573
 576-AsnAspGlyArgGlyProLysSerIleGluAsp-586
 627-ArgGlyArgLeuLysAsnLeuProSer-635

Antigenic Index - Jameson-Wolf

23-GlnAlaHisGlyThrGluGlnSerVal-31
 40-GlyLysSerArgProArgAlaThrSerGly-49
 55-ThrAlaSerAspLysIleIleSerGlyAspThrLeuArgGlnLysAla-70
 97-IleArgGlyGlnThrGlyArgArgIleLysVal-107
 109-AsnHisHisGlyGluThrGlyAspMetAlaAspPheSerProAspHis-124
 137-GluIleLeuArgGlyPro-142
 157-AspValAlaAspGlyLysIleProGluLysMetProGluAsnGlyValSerGlyGluLeuGlyLeu-178
 180-LeuSerSerGlyAsnLeuGluLysLeuThrSerGlyGly-192
 207-GlyLeuTyrArgLysSerGlyAspTyrAlaValProArgTyrArgAsnLeuLysArgLeuProAspSerHis
 AlaAspSerGlnThrGly-236
 244-GlyGluLysGlyPhe-248
 252-AlaTyrSerAspArgArgAspGlnTyrGly-261
 263-ProAlaHisSerHisGluTyrAspAspCysHisAla-274
 281-SerLeuIleAsnLysArgTyrLeu-288
 295-LeuThrGluGluAspIleAspTyrAspAsnProGlyLeu-307
 310-GlyPheHisAspAspAspAlaHis-318

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321-AlaHisAsnGlyLysProTrpIleAspLeuArgAsnLysArgTyrGluLeuArgAlaGluTrpLysGlnPro
 PheProGly-347
 354-HisLeuAsnArgAsnAspTyrArgHisAspGluLysAlaGlyAspAlaVal-370
 374-PheAsnAsnGlnThrGlnAsnAlaArgIleGluLeuArgHisGlnProIleGlyArgLeuLysGlySerTrp
 -397
 402-LeuGlyGlnLysSerSerAlaLeu-409
 411-AlaThrSerGluAlaValLys-417
 422-LeuAspAsnLysVal-426
 437-AlaAsnTrpAspAsnPheThrLeuGluGlyGlyValArgValGluLysGlnLysAlaSerIleArgTyrAsp
 LysAlaLeuIleAspArgGluAsnTyrTyrAsnHisProLeuProAsp-476
 478-GlyAlaHisArgGlnThrAla-484
 506-SerHisGlnGluArgLeuProSerThrGlnGluLeuTyrAlaHisGly-521
 531-ValGlyAsnLysHisLeuAsnLysGluArgSerAsnAsnIle-544
 550-TyrGluGlyAspArgTrpGln-556
 562-TyrArgAsnArgPheGlyAsn-568
 574-ThrLeuAsnAspGlyArgGlyProLysSerIleGluAspAspSerGluMetLysLeu-592
 594-ArgTyrAsnGlnSerGlyAlaAspPheTyrGlyAlaGluGly-607
 609-IleTyrPheLysProThrProArgTyrArgIle-619
 621-ValSerGlyAspTyrValArgGlyArgLeuLysAsnLeuProSerLeuProGlyArgGluAspAlaTyrGly
 AsnArg-646
 651-GlnAlaAspGlnAsnAlaProArgValProAla-661
 671-SerLeuThrAspArgIleAspAla-678
 689-AsnLysLeuAlaArgTyrGluThrArgThrProGlyHis-701
 707-GlyAlaAsnTyrArgArgAsnThrArgTyrGlyGluTrp-719
 725-AlaAspAsnLeuLeu-729
 739-PheLeuSerAspThrProGlnMetGlyArgSerPheThrGlyGlyVal-754

Hydrophilic Regions - Hopp-Woods

25-HisGlyThrGluGln-29
 40-GlyLysSerArgProArgAlaThr-47
 55-ThrAlaSerAspLysIleIleSer-62
 64-AspThrLeuArgGlnLysAla-70
 100-GlnThrGlyArgArgIleLysVal-107
 112-GlyGluThrGlyAspMetAlaAspPheSerPro-122
 157-AspValAlaAspGlyLysIleProGluLysMetProGluAsnGlyValSer-173
 181-SerSerGlyAsnLeuGluLysLeuThr-189
 207-GlyLeuTyrArgLysSerGlyAsp-214
 219-ArgTyrArgAsnLeuLysArgLeuProAspSerHisAlaAspSerGlnThr-235
 253-TyrSerAspArgArgAspGlnTyr-260
 267-HisGluTyrAspAspCysHisAla-274
 295-LeuThrGluGluAspIleAspTyrAspAsn-304
 311-PheHisAspAspAspAlaHis-318
 330-LeuArgAsnLysArgTyrGluLeuArgAlaGluTrp-341
 354-HisLeuAsnArgAsnAspTyrArgHisAspGluLysAlaGlyAspAlaVal-370
 378-ThrGlnAsnAlaArgIleGluLeuArgHis-387
 391-GlyArgLeuLysGly-395
 411-AlaThrSerGluAlaValLys-417
 446-GlyGlyValArgValGluLysGlnLysAlaSerIleArgTyrAspLysAlaLeuIleAspArgGluAsnTyr
 -469
 478-GlyAlaHisArgGlnThrAla-484
 506-SerHisGlnGluArgLeuProSer-513
 535-HisLeuAsnLysGluArgSerAsnAsn-543
 550-TyrGluGlyAspArgTrp-555
 575-LeuAsnAspGlyArgGlyProLysSerIleGluAspAspSerGluMetLysLeu-592
 603-TyrGlyAlaGluGly-607

613-ProThrProArgTyrArgIle-619
 624-AspTyrValArgGlyArgLeuLysAsn-632
 637-ProGlyArgGluAspAlaTyrGly-644
 652-AlaAspGlnAsnAlaProArgValProAla-661
 671-SerLeuThrAspArgIleAspAla-678
 690-LysLeuAlaArgTyrGluThrArgThrProGly-700
 709-AsnTyrArgArgAsnThrArgTyrGly-717

a150**AMPHI Regions - AMPHI**

1-MetGlnAsnThrAsnProProLeuProProMetProProGluIleThrGlnLeuLeuSerGlyLeuAspAlaAlaGlnTrpAlaTrpLeuSerGlyTyrAlaTrpAlaLysAlaGlyAsnGlyAlaSerAlaGlyLeuProAlaLeuGlnThrAlaLeuProThrAlaGluProPheSerValThrValLeuSerAlaSerGlnThrGlyAsnAlaLysSerValAlaAspLysAlaAlaAspSerLeuGluAlaAlaGlyIleGlnValSerArgAlaGluLeuLysAspTyrLysAlaLysAsnIleAlaGlyGluArgArgLeuLeuLeuValThrSerThrGlnGlyGluGlyGluProProGluGluAlaValValLeuHisLysLeuLeuAsnGlyLysLysAlaProLysLeuAspLysLeuGlnPheAlaValLeuGlyLeuGlyAspSerSerTyrProAsnPheCysArgAlaGlyLysAspPheAspLysArgPheGluGluLeuGlyAlaLysArgLeuLeuGluArgValAspAlaAspLeuAspPheAlaAlaAlaAlaAspGlyTrpThrAspAsnIleAlaAlaLeuLeuLysGluGluAlaAlaLysAsnArgAlaThrProAlaProGlnThrThrProProAlaGlyLeuGlnThrAlaProAspGlyArgTyrCysLysAlaAspProPheProAlaAlaLeuLeuAlaAsnGlnLysIleThrAlaArgGlnSerAspLysAspValArgHisIleGluIleAspLeuSerGlySerAspLeuHisTyrLeuProGlyAspAlaLeuGlyValTrpPheAspAsnAspProAlaLeuValArgGluIleLeuAspLeuLeuGlyIleAspGlnAlaThrGluIleGlnAlaGlyGlyLysThrLeuProValAlaSerAlaLeuLeuSerHisPheGluLeuThrGlnAsnThrProAlaPheValLysGlyTyrAlaProPheAlaAspAspAspGluLeuAspArgIleAlaAlaAspAsnAlaValLeuGlnGlyPheValGlnSerThrProIleAlaAspValLeuHisArgPheProAlaLysLeuThrAlaGluGlnPheAlaGlyLeuLeuArgProLeuAlaProArgLeuTyrSerIleSerSerSerGlnAlaGluValGlyAspGluValHisLeuThrValGlyAlaValArgPheGluHisGluGlyArgAlaArgAlaGlyGlyAlaSerGlyPheLeuAlaAspArgLeuGluGluAspGlyThrValArgValPheValGluArgAsnAspGlyPheArgLeuProGluAspSerArgLysProIleValMetIleGlySerGlyThrGlyValAlaProPheArgAlaPheValGlnGlnArgAlaAlaGluAsnAlaGluGlyLysAsnTrpLeuPhePheGlyAsnProHisPheAlaArgAspPheLeuTyrGlnThrGluTrpGlnGlnPheAlaLysAspGlyPheLeuHisArgTyrAspPheAlaTrpSerArgAspGlnGluGluLysIleTyrValGlnAspLysIleArgGluGlnAlaGluGlyLeuTrpGlnTrpLeuGlnGluGlyAlaHisIleTyrValCysGlyAspAlaAlaLysMetAlaLysAspValGluAlaAlaLeuLeuAspValIleIleGlyAlaGlyHisLeuAspGluGluGlyAlaGluGluTyrLeuAspMetLeuArgGluGluLysArgTyrGlnArgAspValTyr-599

Antigenic Index - Jameson-Wolf

1-MetGlnAsnThrAsnProProLeuProProMetProProGluIleThrGlnLeuLeuSerGlyLeuAspAlaAlaGlnTrpAlaTrpLeuSerGlyTyrAlaTrpAlaLysAlaGlyAsnGlyAlaSerAlaGlyLeuProAlaLeuGlnThrAlaLeuProThrAlaGluProPheSerValThrValLeuSerAlaSerGlnThrGlyAsnAlaLysSerValAlaAspLysAlaAlaAspSerLeuGluAlaAlaGlyIleGlnValSerArgAlaGluLeuLysAspTyrLysAlaLysAsnIleAlaGlyGluArgArgLeuLeuLeuValThrSerThrGlnGlyGluGlyGluProProGluGluAlaValValLeuHisLysLeuLeuAsnGlyLysLysAlaProLysLeuAspLysLeuGlnPheAlaValLeuGlyLeuGlyAspSerSerTyrProAsnPheCysArgAlaGlyLysAspPheAspLysArgPheGluGluLeuGlyAlaLysArgLeuLeuGluArgValAspAlaAspLeuAspPheAlaAlaAlaAlaAspGlyTrpThrAspAsnIleAlaAlaLeuLeuLysGluGluAlaAlaLysAsnArgAlaThrProAlaProGlnThrThrProProAlaGlyLeuGlnThrAlaProAspGlyArgTyrCysLysAlaAspProPheProAlaAlaLeuLeuAlaAsnGlnLysIleThrAlaArgGlnSerAspLysAspValArgHisIleGluIleAspLeuSerGlySerAspLeuHisTyrLeuProGlyAspAlaLeuGlyValTrpPheAspAsnAspProAlaLeuValArgGluIleLeuAspLeuLeuGlyIleAspGlnAlaThrGluIleGlnAlaGlyGlyLysThrLeuProValAlaSerAlaLeuLeuSerHisPheGluLeuThrGlnAsnThrProAlaPheValLysGlyTyrAlaProPheAlaAspAspAspGluLeuAspArgIleAlaAlaAspAsnAlaValLeuGlnGlyPheValGlnSerThrProIleAlaAspValLeuHisArgPheProAlaLysLeuThrAlaGluGlnPheAlaGlyLeuLeuArgProLeuAlaProArgLeuTyrSerIleSerSerSerGlnAlaGluValGlyAspGluValHisLeuThrValGlyAlaValArgPheGluHisGluGlyArgAlaArgAlaGlyGlyAlaSerGlyPheLeuAlaAspArgLeuGluGluAspGlyThrValArgValPheValGluArgAsnAspGlyPheArgLeuProGluAspSerArgLysProIleValMetIleGlySerGlyThrGlyValAlaProPheArgAlaPheValGlnGlnArgAlaAlaGluAsnAlaGluGlyLysAsnTrpLeuPhePheGlyAsnProHisPheAlaArgAspPheLeuTyrGlnThrGluTrpGlnGlnPheAlaLysAspGlyPheLeuHisArgTyrAspPheAlaTrpSerArgAspGlnGluGluLysIleTyrValGlnAspLysIleArgGluGlnAlaGluGlyLeuTrpGlnTrpLeuGlnGluGlyAlaHisIleTyrValCysGlyAspAlaAlaLysMetAlaLysAspValGluAlaAlaLeuLeuAspValIleIleGlyAlaGlyHisLeuAspGluGluGlyAlaGluGluTyrLeuAspMetLeuArgGluGluLysArgTyrGlnArgAspValTyr-599

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LysAspGlyPheLeuHisArgTyrAspPheAlaTrpSerArgAspGlnGluGluLysIleTyrValGlnAspLysIleArgGluGlnAlaGluGlyLeuTrpGlnTrpLeuGlnGluGlyAlaHisIleTyrValCysGlyAspAlaAlaLysMetAlaLysAspValGluAlaAlaLeuLeuAspValIleIleGlyAlaGlyHisLeuAspGluGluGlyAlaGluGluTyrLeuAspMetLeuArgGluGluLysArgTyrGlnArgAspValTyr-599

Hydrophilic Regions - Hopp-Woods

1-MetGlnAsnThrAsnProProLeuProProMetProProGluIleThrGlnLeuLeuSerGlyLeuAspAlaAlaGlnTrpAlaTrpLeuSerGlyTyrAlaTrpAlaLysAlaGlyAsnGlyAlaSerAlaGlyLeuProAlaLeuGlnThrAlaLeuProThrAlaGluProPheSerValThrValLeuSerAlaSerGlnThrGlyAsnAlaLysSerValAlaAspLysAlaAlaAspSerLeuGluAlaAlaGlyIleGlnValSerArgAlaGluLeuLysAspTyrLysAlaLysAsnIleAlaGlyGluArgArgLeuLeuLeuValThrSerThrGlnGlyGluGlyGluProProGluGluAlaValValLeuHisLysLeuLeuAsnGlyLysLysAlaProLysLeuAspLysLeuGlnPheAlaValLeuGlyLeuGlyAspSerSerTyrProAsnPheCysArgAlaGlyLysAspPheAspLysArgPheGluGluLeuGlyAlaLysArgLeuLeuGluArgValAspAlaAspLeuAspPheAlaAlaAlaAlaAspGlyTrpThrAspAsnIleAlaAlaLeuLeuLysGluGluAlaAlaLysAsnArgAlaThrProAlaProGlnThrThrProProAlaGlyLeuGlnThrAlaProAspGlyArgTyrCysLysAlaAspProPheProAlaAlaLeuLeuAlaAsnGlnLysIleThrAlaArgGlnSerAspLysAspValArgHisIleGluIleAspLeuSerGlySerAspLeuHisTyrLeuProGlyAspAlaLeuGlyValTrpPheAspAsnAspProAlaLeuValArgGluIleLeuAspLeuLeuGlyIleAspGlnAlaThrGluIleGlnAlaGlyGlyLysThrLeuProValAlaSerAlaLeuLeuSerHisPheGluLeuThrGlnAsnThrProAlaPheValLysGlyTyrAlaProPheAlaAspAspAspGluLeuAspArgIleAlaAlaAspAsnAlaValLeuGlnGlyPheValGlnSerThrProIleAlaAspValLeuHisArgPheProAlaLysLeuThrAlaGluGlnPheAlaGlyLeuLeuArgProLeuAlaProArgLeuTyrSerIleSerSerSerGlnAlaGluValGlyAspGluValHisLeuThrValGlyAlaValArgPheGluHisGluGlyArgAlaArgAlaGlyGlyAlaSerGlyPheLeuAlaAspArgLeuGluGluAspGlyThrValArgValPheValGluArgAsnAspGlyPheArgLeuProGluAspSerArgLysProIleValMetIleGlySerGlyThrGlyValAlaProPheArgAlaPheValGlnGlnArgAlaAlaGluAsnAlaGluGlyLysAsnTrpLeuPhePheGlyAsnProHisPheAlaArgAspPheLeuTyrGlnThrGluTrpGlnGlnPheAlaLysAspGlyPheLeuHisArgTyrAspPheAlaTrpSerArgAspGlnGluGluLysIleTyrValGlnAspLysIleArgGluGlnAlaGluGlyLeuTrpGlnTrpLeuGlnGluGlyAlaHisIleTyrValCysGlyAspAlaAlaLysMetAlaLysAspValGluAlaAlaLeuLeuAspValIleIleGlyAlaGlyHisLeuAspGluGluGlyAlaGluGluTyrLeuAspMetLeuArgGluGluLysArgTyrGlnArgAspValTyr-599

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AMPHI Regions - AMPHI

6-AsnIleAlaIleIleAla-11
 22-AspGlnLeuLeuArg-26
 72-ValAspThrProGlyHis-77
 81-GlyGlyGluValGluArgValLeuGlyMetValAspCysVal-94
 128-LysIleAspLysPro-132
 144-PheGluLeuPheAspAsnLeuGlyAlaThr-153
 165-SerGlyLeuSerGlyPheAlaLysLeuGluGluThrAspGluSerAsn-180
 184-ProLeuPheAspThrIleLeuLysTyrThr-193
 248-GlyArgIleAsnGlnLeuLeuGlyPheLysGlyLeuGluArgVal-262
 273-ValIleIleSerGlyIleGlu-279
 330-IleArgAspArgLeuGlnLysGluLeu-338
 348-AspThrAlaAspAla-352
 396-CysGluProTyrGluAsnLeuThrValAsp-405
 457-LeuThrArgGlyValGly-462
 464-MetSerHisValPheAsp-469
 537-LysGlyLysLysLeuThrAsnIle-544
 551-GluAlaValArgLeuThrThr-557

Antigenic Index - Jameson-Wolf

1-MetLysGlnIleArg-5
 13-ValAspHisGlyLysThrThrLeu-20
 24-LeuLeuArgGlnSerGlyThrPheArgAlaAsnGlnGlnValAspGluArgValMetAspSerAsnAspLeuGluLysGluArgGlyIle-53

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59-AsnThrAlaIleAspTyrGluGlyTyr-67
 72-ValAspThrProGlyHisAlaAspPheGlyGlyGluValGluArg-86
 99-AspAlaGlnGluGlyProMetProGlnThrArgPheValThr-112
 128-LysIleAspLysProSerAlaArgProSerTrp-138
 151-GlyAlaThrAspGluGlnLeuAsp-158
 171-AlaLysLeuGluGluThrAspGluSerAsnAspMetArgProLeu-185
 193-ThrProAlaProSerGlySerAlaAspGluThrLeu-204
 211-LeuAspTyrAspAsnTyrThrGly-218
 226-LeuAsnGlyArgIleLysProGlyGln-234
 240-AsnHisAspGlnGlnIleAla-246
 257-LysGlyLeuGluArgValProLeuGluGluAlaGluAlaGlyAsp-271
 277-GlyIleGluAspIleGly-282
 287-IleThrAspLysAspAsnProLysGlyLeuPro-297
 300-SerValAspGluProThrLeu-306
 314-ThrSerProLeuAlaGlyThrGluGlyLysPheValThrSerArgGlnIleArgAspArgLeuGlnLysGlu
 LeuLeu-339
 344-LeuArgValGluAspThrAlaAspAlaAspValPheArgValSerGlyArgGlyGluLeu-363
 371-AsnMetArgArgGluGlyTyr-377
 381-ValGlyLysProArgValValTyrArgAspIleAspGlyGlnLysCysGluProTyrGluAsnLeuThrVal
 AspValProAspAspAsnGlnGlyAlaValMetGluGluLeuGlyArgArgArgGlyGluLeuThrAsnMetGluS
 erAspGlyAsnGlyArgThrArgLeuGluTyr-440
 467-ValPheAspAspTyrAlaProValLysProAspMetProGlyArgHisAsnGly-484
 489-GlnGluGlnGlyGlu-493
 501-AsnLeuGluAspArgGlyArgMetPheValSerProAsnAspLysIleTyr-517
 524-IleHisSerArgAspAsnAspLeu-531
 535-ProLeuLysGlyLysLysLeuThrAsnIleArgAlaSerGlyThrAspGluAlaValArg-554
 569-PheIleAspAspAspGluLeuValGlu-577
 579-ThrProGlnSerIleArgLeuArgLysArgTyrLeuSerGluLeuGluArgArgArgHisPheLysLysLeu
 Asp-603

Hydrophilic Regions - Hopp-Woods

1-MetLysGlnIleArg-5
 29-GlyThrPheArgAla-33
 35-GlnGlnValAspGluArgValMetAspSerAsnAspLeuGluLysGluArgGlyIle-53
 80-PheGlyGlyGluValGluArg-86
 99-AspAlaGlnGluGlyProMetPro-106
 128-LysIleAspLysProSerAla-134
 151-GlyAlaThrAspGluGlnLeuAsp-158
 171-AlaLysLeuGluGluThrAspGluSerAsnAspMetArgProLeu-185
 198-GlySerAlaAspGluThrLeu-204
 226-LeuAsnGlyArgIleLysPro-232
 241-HisAspGlnGlnIleAla-246
 258-GlyLeuGluArgValProLeuGluGluAlaGluAlaGlyAsp-271
 277-GlyIleGluAspIleGly-282
 287-IleThrAspLysAspAsnProLysGly-295
 300-SerValAspGluProThrLeu-306
 318-AlaGlyThrGluGlyLysPheValThr-326
 328-ArgGlnIleArgAspArgLeuGlnLysGluLeuLeu-339
 344-LeuArgValGluAspThrAlaAspAlaAspValPheArgValSerGlyArgGlyGluLeu-363
 371-AsnMetArgArgGluGlyTyr-377
 381-ValGlyLysProArgValValTyrArgAspIleAspGlyGlnLysCysGluProTyrGlu-400
 405-AspValProAspAspAsnGlnGlyAlaValMetGluGluLeuGlyArgArgArgGlyGluLeuThrAsnMet
 GluSerAspGlyAsnGlyArgThrArgLeu-438
 472-AlaProValLysProAspMetProGlyArgHis-482
 489-GlnGluGlnGlyGlu-493

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502-LeuGluAspArgGlyArgMet-508
 512-ProAsnAspLysIleTyr-517
 525-HisSerArgAspAsnAspLeu-531
 536-LeuLysGlyLysLysLeuThrAsn-543
 545-ArgAlaSerGlyThrAspGluAlaValArg-554
 569-PheIleAspAspAspGluLeuValGlu-577
 583-IleArgLeuArgLysArgTyrLeuSerGluLeuGluArgArgHisPheLysLysLeuAsp-603

a152**AMPHI Regions - AMPHI**

10-PheProThrArgLeuPhe-15
 66-ArgPheSerArgPheValArgGlyTrpSerGlyIleArgGluTyrMetLysAsnGlyIleProGluHisValGlnProGlyHisAsnProLeu-96
 103-AlaLeuLeuAlaAla-107
 130-LeuAsnHisLeuValSerGluHisThrGlySerLeu-141
 150-PheLysLeuLeuAlaValPheSerAlaValHisIleAlaXxxValAlaAlaTyr-167

Antigenic Index - Jameson-Wolf

1-MetLysAsnLysThrLysValTrp-8
 28-TyrSerAlaLysThrGlyGlyAsp-35
 61-GlySerAspThrAlaArgPhe-67
 74-TrpSerGlyIleArgGluTyrMetLysAsnGlyIleProGluHisValGlnProGlyHisAsnProLeu-96
 125-SerThrAsnGlyTyr-129
 137-HisThrGlySerLeuMetArg-143
 169-ValPheLysLysLysAsnLeu-175
 186-IleGluGlyLysThrSerIle-192

Hydrophilic Regions - Hopp-Woods

1-MetLysAsnLysThrLysVal-7
 63-AspThrAlaArgPhe-67
 78-ArgGluTyrMetLys-82
 169-ValPheLysLysLysAsnLeu-175
 186-IleGluGlyLysThrSerIle-192

a153**AMPHI Regions - AMPHI**

17-AlaAlaSerValLeuSerLeuProGluMetMetArgLeuMetValPhe-32
 96-ThrLeuValAlaTyrIleLysLeuSerSerValAlaGlu-108
 130-ValSerValProGlnHisTrp-136
 222-ValAsnThrIleLeuAsnGlyIleAlaTyr-231
 274-AlaLysLysLeuSerHisLeuTyrArgIleThrGluAlaValGlyArgTrpSerMetIleAspIlePheValIle-298

Antigenic Index - Jameson-Wolf

65-IleArgLysGlnAla-69
 81-ValArgLeuArgGln-85
 107-AlaGluValArgPhe-111
 143-ArgLeuThrGlyAspAsnAlaValGlnThrAlaSerGluGlyLysThrCysCysSer-161
 165-TyrPheArgAspSerAlaGluSerProCysGly-175
 180-GluLeuTyrArgArgArgProLysSerLeuSer-190
 215-SerAsnProAlaAlaThr-220
 234-AspGluGlyAspArgLeu-239
 272-ThrGlyAlaLysLysLeu-277
 339-LeuLeuTrpAspLysArgAlaSerAspGlyIleAla-350
 352-AsnGluThrGluLysHisAsp-358

Hydrophilic Regions - Hopp-Woods

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81-ValArgLeuArgGln-85
 107-AlaGluValArgPhe-111
 152-ThrAlaSerGluGlyLysThrCysCys-160
 168-AspSerAlaGluSerPro-173
 180-GluLeuTyrArgArgArgProLysSerLeuSer-190
 234-AspGluGlyAspArgLeu-239
 273-GlyAlaLysLysLeu-277
 339-LeuLeuTrpAspLysArgAlaSerAsp-347
 352-AsnGluThrGluLysHisAsp-358

a154**AMPHI Regions - AMPHI**

122-GlyValThrGlyLeuGlyThrLeuLeu-130
 152-GlnAspIleProProValThr-158
 262-ThrLysAsnSerLysAsnValLysSer-270
 298-PheLysGlnSerVal-302
 360-SerLysGluHisTrpLysGlnGlnPheGlnThrAlaLeuAsnLysGlyLeuThrAla-378
 389-SerLysMetIleGluLeuAsnAsp-396
 429-LysLeuAlaAspLeuAspLysPheAspLysLeuPro-441
 446-ValAlaGluLeuAsnGly-451
 467-LeuSerSerIleAspLysLeuValGlyLysProGlnThrGlnAsnIleProAsnGluLeuAsnGlnThrLeu
 LysGluLeuArgThrThr-496
 506-IleTyrGlyAspValGlnAsnThrLeuGlnSerLeuAspLysThrLeuLysAspValGlnProValIleAsn
 ThrLeuLysGluLys-534

Antigenic Index - Jameson-Wolf

1-MetThrAspAsnSerProProProAsnGlyHisAlaGlnAlaArgValArgLysAsnAsnThr-21
 43-LysGluIleArgAsnArgGlyProVal-51
 57-AspSerAlaGluGlyIleGluValAsnAsnThr-67
 75-AspValGlyArgValThrArgIleLysLeuArgAspAspGlnLysGlyValGlu-92
 100-AspValSerGlyLeuIleArgSerAspThrGln-110
 114-ValLysProArgIleAspGlnSerGly-122
 138-ThrProGlyLysSerAspGluAlaLysAspValPheGln-150
 169-LeuIleGlyLysAsnAspArgIleLeuAsn-178
 196-AlaHisPheAspProSerAspGlnSer-204
 212-GlnSerProAsnAspLysLeuIle-219
 228-GluSerGlyIleAsnIleGluThrThrGlySerGlyIleLysLeuAsnSer-244
 256-SerPheAspSerProLysThrLysAsnSerLysAsnValLysSerGluAspSer-273

 275-ThrLeuTyrAspSerArgSerGluValAlaAsnLeuProAspAspArgSerLeu-292
 300-GlnSerValArgGlyLeu-305
 311-ValGluTyrLysGlyLeuAsn-317
 325-ProTyrPheAspArgAsnAspSer-332
 345-IleArgIleGluProSerArgLeuGluIleAsnAlaAspGluGlnSerLysGluHisTrpLysGlnGlnPhe
 -368
 371-AlaLeuAsnLysGlyLeu-376
 386-LeuThrGlySerLysMetIleGluLeuAsnAspGlnProSerAlaSerProLysLeuArgPro-406

 419-GlnGlyGlyGlyLeuAspAspLeuGlnValLysLeu-430
 432-AspLeuLeuAspLysPheAspLysLeuProLeuAspLysThrValAla-447
 450-AsnGlySerLeuAlaGluLeuLysSerThrLeuLysSerAlaAsn-464
 469-SerIleAspLysLeuValGlyLysProGlnThrGlnAsnIleProAsnGluLeuAsnGlnThrLeuLysGlu
 LeuArgThrThr-496
 500-ValSerProGlnSer-504
 516-SerLeuAspLysThrLeuLysAspValGln-525
 530-ThrLeuLysGluLysProAsn-536

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541-AsnSerSerSerLysAspProIleProLysGlySerArg-553

Hydrophilic Regions - Hopp-Woods

1-MetThrAspAsnSerProProPro-8

12-AlaGlnAlaArgValArgLysAsnAsn-20

43-LysGluIleArgAsnArgGly-49

57-AspSerAlaGluGlyIleGlu-63

75-AspValGlyArgValThrArgIleLysLeuArgAspAspGlnLysGlyValGlu-92

105-IleArgSerAspThr-109

116-ProArgIleAspGln-120

140-GlyLysSerAspGluAlaLysAspValPheGln-150

171-GlyLysAsnAspArgIleLeu-177

196-AlaHisPheAspProSerAspGln-203

214-ProAsnAspLysLeuIle-219

258-AspSerProLysThrLysAsnSerLysAsnValLysSerGluAspSer-273

278-AspSerArgSerGluVal-283

285-AsnLeuProAspAspArgSer-291

311-ValGluTyrLysGly-315

328-AspArgAsnAspSer-332

345-IleArgIleGluProSerArgLeuGluIleAsnAlaAspGluGlnSerLysGluHisTrpLys-365

390-LysMetIleGluLeuAsnAspGlnProSerAlaSerProLysLeuArgPro-406

421-GlyGlyLeuAspAspLeuGlnValLysLeu-430

432-AspLeuLeuAspLysPheAspLysLeuProLeuAspLysThrValAla-447

454-AlaGluLeuLysSerThrLeuLysSerAlaAsn-464

469-SerIleAspLysLeuValGly-475

482-IleProAsnGluLeu-486

488-GlnThrLeuLysGluLeuArgThr-495

516-SerLeuAspLysThrLeuLysAspValGln-525

530-ThrLeuLysGluLysProAsn-536

543-SerSerLysAspProIleProLysGlySerArg-553

a155**AMPHI Regions - AMPHI**

28-LysLeuGlyPheGlu-32

42-AlaAlaSerLeuAsp-46

105-LeuArgAlaLysLysVal-110

118-ValProArgIleSerArgAlaGlnAlaLeuAspXxxLeuSerXxxMetAlaAsnIleSerGlyTyrArgAlaValIleGluAlaAlaAsnAlaPheGlyArgXxxPheThrGlyGlnIleThrAlaAlaGly-161

175-ValAlaGlyLeuAlaAlaIleGlyThrAlaAsnSerLeuGlyAlaValValArgValPhe-194

201-AlaGluGlnLeuGluSerMetGlyGly-209

225-AspGlyTyrAlaLysValMet-231

264-AlaProLysXxxXxxXxxLysGluMetValGluSerMetLys-277

281-ValIleValAspLeu-285

307-GlyValLysIleIleGlyTyrThrAspMetAlaAsnArgLeuAlaGlyGln-323

330-ThrAsnLeuValAsnLeuThrLysLeuLeuSer-340

404-LysLeuAlaProAlaXxxIle-410

428-AsnHisPheIleVal-432

451-LeuHisThrProLeuMetSerValThrAsnAlaIleSerGlyIleIle-466

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469-GlyAlaLeuLeuGln-473
 478-AsnGlyPheValSerLeuLeuSerPheValAla-488
 494-IleAsnIlePheGlyGly-499

Antigenic Index - Jameson-Wolf

4-GlyIleProArgGluSerLeuSerGlyGluThrArgVal-16
 44-SerLeuAspAspAlaAla-49
 72-ValAsnAlaProSerGluAspGluLeuProLeuLeuLysGluGlyGln-87
 94-TrpProArgGlnAsnGluAlaLeu-101
 105-LeuArgAlaLysLysValAsn-111
 117-MetValProArgIleSerArg-123
 159-AlaAlaGlyLysValProProAla-166
 202-GluGlnLeuGluSerMetGlyGlyLys-210
 215-AspPheProGlnGluSerGlyGlySerGlyAspGlyTyrAlaLysValMetSer-232
 242-LeuPheAlaGluGlnAlaLysGluValAsp-251
 259-IleProGlyLysProAlaProLysXxxXxxXxxLysGluMetValGluSerMetLysProGlySer-280
 290-GlyGlyAsnCysGluLeuThrLysGlnGlyGlu-300
 320-LeuAlaGlyGlnSerSer-325
 338-LeuLeuSerProAsnLysAspGlyGluIle-347
 349-LeuAspPheGluAspValIle-355
 360-ThrValThrArgAspGlyGluIleThrPhePro-370
 378-AlaGlnProGlnGlnThrProSerGluLysAlaAlaProAlaAlaLysProGluProLysPro-398
 509-MetPheArgLysGly-513

Hydrophilic Regions - Hopp-Woods

4-GlyIleProArgGluSerLeuSerGlyGluThrArgVal-16
 44-SerLeuAspAspAlaAla-49
 74-AlaProSerGluAspGluLeuProLeuLeuLysGluGlyGln-87
 96-ArgGlnAsnGluAlaLeu-101
 105-LeuArgAlaLysLysValAsn-111
 117-MetValProArgIleSerArg-123
 202-GluGlnLeuGluSerMetGly-208
 215-AspPheProGlnGluSerGlyGlySerGlyAspGlyTyrAla-228
 242-LeuPheAlaGluGlnAlaLysGluValAsp-251
 260-ProGlyLysProAlaProLysXxxXxxXxxLysGluMetValGluSerMetLysPro-278
 291-GlyAsnCysGluLeuThrLysGlnGlyGlu-300
 340-SerProAsnLysAspGlyGluIle-347
 349-LeuAspPheGluAspValIle-355
 360-ThrValThrArgAspGlyGluIle-367
 382-GlnThrProSerGluLysAlaAlaProAlaAlaLysProGluProLysPro-398

a156**AMPHI Regions** - AMPHI

56-AsnGlyPheGluAlaPheAlaProPhe-64
 80-AlaThrValAsnThr-84

Antigenic Index - Jameson-Wolf

21-TyrAlaLysLysAlaGlyGlyPheArgPheLysAspAsnHisAsnProArgAspPheLeuAlaArgThrGlnGlyThrAlaAlaArgAlaHisAlaAlaGlnGlnAsnGlyPheGlu-59
 73-AlaThrGlyAsnAlaGlyGln-79
 103-AspLysAlaAlaLeu-107

Hydrophilic Regions - Hopp-Woods

21-TyrAlaLysLysAlaGlyGlyPheArgPheLysAspAsnHisAsnProArgAspPheLeuAla-41
 43-ThrGlnGlyThrAlaAlaArgAlaHisAla-52
 103-AspLysAlaAlaLeu-107

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a157**AMPHI Regions - AMPHI**

10-ArgArgGluLeuArgArgAla-16
 32-IleAsnArgLeuLeuLysArgTyrIleLysArgGly-43
 61-PheValArgAlaAlaGln-66
 137-LeuGlyGlnAlaGlyGly-142
 167-GlnPheValAspArgLeuProArgGluProHisAspLeuLeuLeuAspGly-183

Antigenic Index - Jameson-Wolf

1-MetArgAsnGluGluLysHisAlaLeuArgArgGluLeuArgArgAlaArgAlaGlnMetGlyHisGlnGlyArgLeuAlaAla-28
 34-ArgLeuLeuLysArgTyrIleLysArgGlyArgLysIle-46
 51-ProMetGlyLysGluLeuArgLeuAspGlyPheVal-62
 64-AlaAlaGlnLysArgGlyAlaLysLeu-72
 77-IleGluProArgSerArgArgMetTrp-85
 88-ProTyrProGluSerGlyMetGluArgGluArgIleArgGlyArgAlaLysLeuAsnVal-107
 110-PheAlaGlyArgLysIleArgVal-117
 129-GlyIleAspArgGluGlyTyrArgLeuGlyGln-139
 153-TyrArgLeuGlnAla-157
 168-PheValAspArgLeuProArgGluProHisAspLeuLeuLeu-181

Hydrophilic Regions - Hopp-Woods

1-MetArgAsnGluGluLysHisAlaLeuArgArgGluLeuArgArgAlaArgAlaGlnMet-20
 34-ArgLeuLeuLysArgTyrIleLysArgGlyArgLysIle-46
 54-LysGluLeuArgLeu-58
 64-AlaAlaGlnLysArgGlyAla-70
 77-IleGluProArgSerArgArg-83
 92-SerGlyMetGluArgGluArgIleArgGlyArgAlaLysLeu-105
 111-AlaGlyArgLysIleArgVal-117
 129-GlyIleAspArgGluGlyTyrArg-136
 153-TyrArgLeuGlnAla-157
 170-AspArgLeuProArgGluProHisAspLeuLeu-180

a158**AMPHI Regions - AMPHI**

20-PheSerArgAlaAlaGluGlnLeu-27
 33-AlaValSerArgIleValLysArgLeuGlu-42
 46-GlyValAsnLeuLeuAsnArgThr-53
 63-GlyAlaGlnTyrPheArgArgAlaGlnArgIleLeuGlnGlu-76
 85-LeuAlaValHisGluIleProGln-92
 166-ValIleAlaSerPro-170
 178-ThrProGlnSerThrGluGluLeu-185
 188-HisGlnCysLeuGlyPheThrGluProGlySerLeuAsnThrTrpAlaVal-204

Antigenic Index - Jameson-Wolf

1-MetLysThrAsnSerGluGluLeu-8
 16-GluSerGlySerPheSerArgAlaAlaGlu-25
 36-ArgIleValLysArgLeuGluGluLysLeuGly-46
 49-LeuLeuAsnArgThrThrArgGlnLeuSerLeuThrGluGluGlyAlaGlnTyrPheArgArgAlaGlnArgIleLeuGln-75
 78-AlaAlaAlaGluThrGluMet-84
 90-IleProGlnGlyValLeuArgValAspSer-99
 114-LysPheAsnGluArgTyrProHisIleArg-123
 136-IleGluArgLysValAspIle-142
 144-LeuArgAlaGlyGluLeuAspAspSerGlyLeuArgAla-156
 158-HisLeuPheAspSerArgPheArgVal-166

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168-AlaSerProGluTyrLeuAlaLysHisGlyThrProGlnSerThrGluGluLeuAla-186
192-GlyPheThrGluProGlySerLeuAsn-200
207-AlaGlnGlyAsnProTyrLysIle-214
216-ProHisPheThrAlaSerSerGlyGluIleLeu-226
229-LeuCysLeuSerGlyCysGly-235
243-LeuValAspAsnAspIleAlaGluGlyLysLeu-253
258-AlaGluGlnThrSerAsnLysThrHisProPhe-268
273-TyrSerAspLysAlaValAsnLeu-280
292-GluLeuGlyAsnAsnLeuCysGly-299

Hydrophilic Regions - Hopp-Woods

1-MetLysThrAsnSerGluGluLeu-8
19-SerPheSerArgAlaAlaGlu-25
36-ArgIleValLysArgLeuGluGluLysLeuGly-46
58-SerLeuThrGluGluGlyAlaGlnTyrPheArgArgAlaGlnArgIleLeuGln-75
78-AlaAlaAlaGluThrGluMet-84
95-LeuArgValAspSer-99
114-LysPheAsnGluArgTyrPro-120
136-IleGluArgLysValAspIle-142
144-LeuArgAlaGlyGluLeuAspAspSerGlyLeuArgAla-156
162-SerArgPheArgVal-166
180-GlnSerThrGluGluLeuAla-186
246-AsnAspIleAlaGluGlyLysLeu-253
260-GlnThrSerAsnLysThrHis-266
276-LysAlaValAsnLeu-280

a160**AMPHI Regions - AMPHI**

6-LysLeuValAspPheAlaGlnLeuThrGly-15
72-GlyLeuGlyHisVal-76
121-AlaAspLeuMetAsnGlyLeuProGluThr-130
157-GlyThrValSerMetValAsnAlaLeuSerSer-167
186-LeuSerGlyValLeuLysGlyTrpGlnAspLysArg-197
200-HisLeuIleGlnLysValIleAspLysProGlu-210
218-MetValAlaAlaAlaAsn-223
229-LeuMetArgArgPhe-233
242-HisAlaPheValAsnHisIleArg-249
279-PheGlyLysAlaPheLys-284

Antigenic Index - Jameson-Wolf

2-AspIleLeuAspLysLeuVal-8
28-SerValArgHisGluThrLeuGlnArgGluGlyLeu-39
51-CysIleAspGlyGluThrSerProArgProValSerThrGlyAsp-65
77-LeuSerHisAspGlyLysCysGlyGluSerLeuGlnProAspMetArgGlnHisGly-95
101-GlnCysGlyAsnGlyGlnAspMet-108
115-PheArgTyrAspThrHisAla-121
123-LeuMetAsnGlyLeu-127
149-LeuGluSerLysLysProLeu-155
178-LeuGluGlnAspLysAspValGluLeu-186
192-GlyTrpGlnAspLysArgLeuGly-199
205-ValIleAspLysProGluAspGluTrpAsnValAspLysMetVal-219
228-GlnLeuMetArgArgPheLysSerArgValGlyLeuSerProHis-242
255-LeuLeuLeuLysLysAsnProAspSerVal-264
274-GlnSerGluThrHisPhe-279
281-LysAlaPheLysArg-285
290-SerProGlyGlnTyrArgLysGluGlyGlyGlnLys-301

Hydrophilic Regions - Hopp-Woods

2-AspIleLeuAspLysLeuVal-8
 29-ValArgHisGluThrLeuGlnArgGluGlyLeu-39
 53-AspGlyGluThrSerProArgProValSer-62
 79-HisAspGlyLysCysGlyGluSerLeuGlnProAspMetArgGln-93
 101-GlnCysGlyAsnGlyGlnAsp-107
 149-LeuGluSerLysLysProLeu-155
 178-LeuGluGlnAspLysAspValGluLeu-186
 193-TrpGlnAspLysArgLeuGly-199
 205-ValIleAspLysProGluAspGluTrpAsnVal-215
 228-GlnLeuMetArgArgPheLysSerArgValGly-238
 255-LeuLeuLeuLysLysAsnProAspSer-263
 281-LysAlaPheLysArg-285
 293-GlnTyrArgLysGluGlyGlyGlnLys-301

a163**AMPHI Regions - AMPHI**

60-SerSerLeuGlyAsnIle-65
 67-LeuGlyArgAspGluAsp-72
 76-PheGlyPheLeuSerTrpLeuAlaMetLeuPhe-86
 100-AlaGluProLeuMetHisTyrPheSerAspIleThrAla-112
 170-IleSerGlyArgPheGlyAspAlaIleAspIleMetAlaLeuLeuAlaThrPhePheGlyIleIleThrThr-193
 227-MetSerLeuAlaValValSerAlaIleSerGlyValGlyLysGlyValLysValLeuSer-246
 272-AlaPheGlyAspAsnIleGlyAsnTyrLeuGlyAsnLeuValArg-286
 313-TrpCysSerTrpAlaProPheValGlyLeuPheIleAla-325
 346-LeuPheGlyValLeuTrpPhe-352
 367-AlaGlyGlyValLeuGluLysMetThrSerSer-377
 380-ThrLeuLeuPheLysPhePheAsnTyrLeuProLeuProGluLeuThrSerIleValSerLeuLeu-401
 438-TrpGlyValLeuMetSerAla-444
 454-GlyLeuGlyAsnLeuGlnSerMetThrLeu-463
 520-GluGlnAspIleLeuLysPheLeuLysHisThrAla-531
 535-MetHisGluLeuGlnArgGluLeu-542
 574-AspPheMetTyrGlyIle-579
 583-GlyGlnAspValSerAspGlnLeu-590
 630-AlaAspIleLeuLysAsnTyr-636

Antigenic Index - Jameson-Wolf

29-AspArgAlaLysGlu-33
 65-IleArgLeuGlyArgAspGluAspValPro-74
 111-ThrAlaGlyThrProGluHisArgGlnGln-120
 166-LeuLysGluLysIleSerGlyArgPheGlyAspAlaIleAsp-179
 200-GlnLeuGlyAlaGlyLeu-205
 237-GlyValGlyLysGlyValLysVal-244
 293-AlaTyrGluArgGluHisLysProTrpPhe-302
 326-ArgIleSerLysGlyArgThrIleArg-334
 370-ValLeuGluLysMetThrSerSerProGluThr-380
 409-ThrSerAlaAspSerGlyIle-415
 421-IleThrSerArgAspLysGlyLeuSerAlaProArgTrp-433
 451-ArgSerGlyGlyLeuGlyAsn-457
 484-LeuSerAlaAspLysLysTyrPheGluThrArgValAsnProThrSer-499
 503-ThrGlyGlyLysTrpLysGluArgLeu-511
 516-SerGlnThrGlnGluGlnAspIle-523
 537-GluLeuGlnArgGluLeuSerGluGluTyrGlyLeu-548
 550-ValArgValAspLysMetPheHisGlnAspGluProAla-562

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566-ValIleArgLysGluThrMetArg-573
 581-SerValGlyGlnAspValSerAspGlnLeuIleAsnAspGlyLysLeuProHisIleArgHisGlnThrThr
 TyrLysProTyr-608
 612-PheAspGlyArgValGlyTyr-618
 622-TyrMetAsnLysAspGluLeuIle-629
 632-IleLeuLysAsnTyrGlu-637
 654-GluGlnValGluLeuAlaGlu-660

Hydrophilic Regions - Hopp-Woods

29-AspArgAlaLysGlu-33
 66-ArgLeuGlyArgAspGluAspValPro-74
 114-ThrProGluHisArgGlnGln-120
 166-LeuLysGluLysIleSerGlyArgPheGlyAsp-176
 238-ValGlyLysGlyValLysVal-244
 293-AlaTyrGluArgGluHisLysPro-300
 327-IleSerLysGlyArgThrIleArg-334
 370-ValLeuGluLysMetThrSerSerPro-378
 422-ThrSerArgAspLysGlyLeuSer-429
 484-LeuSerAlaAspLysLysTyrPheGlu-492
 506-LysTrpLysGluArgLeu-511
 517-GlnThrGlnGluGlnAspIle-523
 537-GluLeuGlnArgGluLeuSerGluGluTyrGlyLeu-548
 550-ValArgValAspLysMetPheHisGlnAspGluProAla-562
 566-ValIleArgLysGluThrMetArg-573
 581-SerValGlyGlnAspValSerAsp-588
 590-LeuIleAsnAspGlyLysLeuProHis-598
 622-TyrMetAsnLysAspGluLeuIle-629
 654-GluGlnValGluLeuAlaGlu-660

a164**AMPHI Regions - AMPHI**

6-AlaAsnPheTyrGluMetLeuThrAlaAla-15
 33-AlaTyrArgAlaLeuLysGlnGlu-40
 75-AlaValSerAlaIleGlyAlaVal-82
 97-TyrIleLeuAsnAspCys-102
 113-LeuSerLysGluLeuAlaGlyLeuLysAla-122
 148-PheGluAspValArgArgPheProGlu-156
 160-LeuGlyArgGlnProArgIleAsnAspLeuAlaHis-171
 189-TyrAlaAsnLeuPheAlaAsnLeuAsnGlyIleGluArgIlePheLys-204
 264-ValProAlaIleTyrThr-269
 282-TrpPheAsnArgIle-286
 311-AlaLysLeuLeuGluGlyTyrGlyLeuSer-320
 362-GluValGlyGluLeuIle-367
 374-MetArgGlyTyrLeuAsn-379
 387-ThrIleValAsnGlyTrpLeuLys-394
 424-ValTyrProArgGluIleGluGluGlu-432
 459-PheValGlnLeuLysGluGlyMet-466
 472-GluIleArgArgHisLeuArgThrVal-480
 484-PheLysIleProLysGln-489
 499-AsnAlaThrGlyLysValLeuLysArgValLeuLysGluGlnPheAspGlyAsn-516

Antigenic Index - Jameson-Wolf

1-MetAsnArgThrTyr-5
 15-AlaCysArgLysAsnGlyAsnGly-22
 26-PheAspGlyLysGluLysThrAlaTyrArgAlaLeuLysGlnGluAlaGluAla-43
 63-ValSerAsnSerThrGlu-68

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88-ThrPheLeuLysAsnSerGlu-94
 100-AsnAspCysLysAla-104
 112-GlyLeuSerLysGluLeuAlaGly-119
 121-LysAlaGlnThrProValGlu-127
 133-GlyGlnSerArgProAspGlyGluMetAlaGluGlyAspAlaPhePheGluAspValArgArgPheProGlu
 LysProAspLeuGlyArgGlnProArgIleAsnAsp-168
 176-SerGlyThrThrGlyHisProLysGlyAla-185
 196-LeuAsnGlyIleGluArgIlePheLysIleSerLysArgAspArgPhe-211
 270-AlaMetSerLysThrLysIle-276
 291-SerGlyGlyAlaProLeuAla-297
 304-PheLysAlaLysPheProArg-310
 317-TyrGlyLeuSerGluAlaSer-323
 330-ThrProGluArgGlnLysAlaArgSer-338
 343-LeuProGlyLeuGluValLysAlaValAspGluGluLeuValGluValProArgGlyGluValGly-364
 367-IleValArgGlyGlySerValMet-374
 382-AlaAlaThrAspGluThrIle-388
 393-LeuLysThrGlyAsp-397
 400-ThrIleAspGluAspGly-405
 410-ValAspArgLysLysAspLeuIleIleSerLysGlyGlnAsnValTyrProArgGluIleGluGluGluIle
 TyrLys-435
 446-GlyValLysAspArgTyrAlaAspGluGluIle-456
 462-LeuLysGluGlyMetAspLeuGlyGluAsnGluIleArgArgHisLeuArg-478
 490-IleHisPheLysAspGlyLeuProArgAsnAlaThrGlyLysValLeuLysArgValLeuLysGluGlnPhe
 AspGlyAsnLys-517

Hydrophilic Regions - Hopp-Woods

15-AlaCysArgLysAsnGlyAsn-21
 26-PheAspGlyLysGluLysThrAlaTyrArgAlaLeuLysGlnGluAlaGluAla-43
 112-GlyLeuSerLysGluLeuAlaGly-119
 135-SerArgProAspGlyGluMetAlaGluGlyAspAlaPhePheGluAspValArgArgPheProGluLysPro
 AspLeuGlyArgGlnProArgIleAsnAsp-168
 198-GlyIleGluArgIlePheLysIleSerLysArgAspArgPhe-211
 304-PheLysAlaLysPheProArg-310
 330-ThrProGluArgGlnLysAlaArgSer-338
 346-LeuGluValLysAlaValAspGluGluLeuValGluValProArgGlyGluValGly-364
 382-AlaAlaThrAspGluThrIle-388
 400-ThrIleAspGluAspGly-405
 410-ValAspArgLysLysAspLeuIleIle-418
 425-TyrProArgGluIleGluGluGluIleTyrLys-435
 446-GlyValLysAspArgTyrAlaAspGluGluIle-456
 462-LeuLysGluGlyMetAspLeuGlyGluAsnGluIleArgArgHisLeuArg-478
 494-AspGlyLeuProArgAsnAlaThr-501
 503-LysValLeuLysArgValLeuLysGluGlnPheAspGlyAsnLys-517

a165-1**AMPHI Regions - AMPHI**

17-AlaThrLeuGlyValLeuLeuLysGluLeu-26
 33-ThrLeuIleGluArgLeuGluAsp-40
 72-IleIleAspProAlaArgAlaLeuAsnIleAla-82
 90-GlnPheTrpAlaThr-94
 108-AsnAlaValProHis-112
 125-LeuGlnLysArgTyrAspAlaPheLysThrGlnLysLeuPheGluAsnMet-141
 182-ArgLeuThrArgGlnMetValLysTyrLeuGlnGly-193
 198-ThrGluPheAsnArgHisValGluAspIleLysArgGlu-210
 364-LysThrLysGluGlu-368
 371-AlaSerLeuLeuGluTyrTyr-377

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456-ArgLeuLysGluLeu-460

Antigenic Index - Jameson-Wolf

1-MetAlaGluAlaThrAsp-6
 24-LysGluLeuGluProSerTrp-30
 36-GluArgLeuGluAspValAlaLeuGluSerSerAsnAlaTrpAsnAsnAlaGlyThrGly-55
 97-AlaGluGlyLysLeuGluAspAsnSer-105
 117-MetAsnGluAspHisCysSerTyrLeuGlnLysArgTyrAspAlaPheLysThrGlnLysLeuPheGlu-139
 141-MetGluPheSerThrAspArgAsnLysIleSerAsp-152
 157-MetMetArgGlyArgAspGluAsnGlnPro-166
 169-AlaAsnTyrSerAlaGluGlyThrAspValAspPheGlyArgLeuThrArgGlnMet-187
 191-LeuGlnGlyLysGlyValLysThrGluPheAsnArgHisValGluAspIleLysArgGluSerAspGly-213
 219-ThrAlaAspThrArgAsnProAspGlyGlnLeu-229
 249-GlnLysSerGlyIleProGluGlyLysGlyTyrGly-260
 269-PheArgAsnSerAsnProGluThrAlaGluGlnHisAsn-281
 300-LeuAspThrArgAsnValAspGlyLysArgHisLeu-311
 322-AsnPheLeuLysGlnGlySerLeuMet-330
 361-GluLeuArgLysThrLysGluGluArgPhe-370
 377-TyrProGluAlaAsnProAspAspTrpGlu-386
 395-GlnIleIleLysLysAspSerGluLysGlyGly-405
 415-AlaHisAlaAspGlySer-420
 428-SerProGlyAlaSerThr-433
 446-PheProGluArgThrProSerTrpGluGlyArgLeuLysGluLeuValProGlyTyr-464
 467-LysLeuAsnGluAsnProGluArgAlaAspGlu-477

Hydrophilic Regions - Hopp-Woods

1-MetAlaGluAlaThrAsp-6
 24-LysGluLeuGluPro-28
 36-GluArgLeuGluAspValAlaLeuGluSer-45
 97-AlaGluGlyLysLeuGluAspAsnSer-105
 117-MetAsnGluAspHisCys-122
 125-LeuGlnLysArgTyrAspAlaPheLysThr-134
 141-MetGluPheSerThrAspArgAsnLysIleSerAsp-152
 158-MetArgGlyArgAspGluAsnGlnPro-166
 172-SerAlaGluGlyThrAspValAspPhe-180
 182-ArgLeuThrArgGlnMet-187
 194-LysGlyValLysThrGluPheAsnArgHisValGluAspIleLysArgGluSerAspGly-213
 219-ThrAlaAspThrArgAsnProAspGly-227
 252-GlyIleProGluGlyLysGly-258
 272-SerAsnProGluThrAlaGluGlnHisAsn-281
 300-LeuAspThrArgAsnValAspGlyLysArg-309
 361-GluLeuArgLysThrLysGluGluArgPhe-370
 380-AlaAsnProAspAspTrpGlu-386
 395-GlnIleIleLysLysAspSerGluLysGlyGly-405
 446-PheProGluArgThrProSerTrpGluGlyArgLeuLysGluLeuVal-461
 467-LysLeuAsnGluAsnProGluArgAlaAspGlu-477

a205-1**AMPHI Regions** - AMPHI

6-ProGluGlnAsnValValArgLeuThrGlyLysHisProAsnAspLeuGluAlaValValGlyLys-27
 46-CysHisThrLeuPheAlaLysLeuValGlyAsnIleAlaGluAspGlyGlyLys-63
 75-GlnProTyrGlnAla-79

Antigenic Index - Jameson-Wolf

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1-ProLeuLysGlyLeuProGluGlnAsnVal-10
 13-LeuThrGlyLysHisProAsnAspLeuGluAlaValVal-25
 27-LysCysMetGluThrAspGlyLysGlyAlaProSerGly-39
 57-IleAlaGluAspGlyGlyLysLeuThr-65
 77-TyrGlnAlaGlyLysSerGlyTyr-84
 96-IleAspSerGluGly-100
 103-TyrPheArgArgArgHisTyr-109

Hydrophilic Regions - Hopp-Woods

13-LeuThrGlyLysHisProAsnAspLeuGluAlaValVal-25
 27-LysCysMetGluThrAspGlyLysGlyAla-36
 57-IleAlaGluAspGlyGlyLysLeu-64
 78-GlnAlaGlyLysSerGly-83
 96-IleAspSerGluGly-100
 104-PheArgArgArgHisTyr-109

a206**AMPHI Regions - AMPHI**

32-ProLysGlnThrValArgGlnIleGlnAlaVal-42
 44-IleSerHisIleAspArgThrGlnGly-52
 81-CysSerGlyMetIleGln-86
 99-ArgThrAlaArgAspMet-104
 150-SerGlyLysThrIleLysThrGlu-157

Antigenic Index - Jameson-Wolf

2-PheProProAspLysThrLeu-8
 21-GlyThrThrSerGlyLysHisArgGlnProLysProLysGlnThrValArg-37
 45-SerHisIleAspArgThrGlnGlySerGln-54
 66-ThrProTyrLysTrpGlyGlySerSerThr-75
 96-LysLeuProArgThrAlaArgAspMetAlaAlaAlaSerArgLysIleProAspSerArgLeuLysAlaGly-119
 126-ThrGlyGlyAlaHisArgTyrSer-133
 148-ProSerSerGlyLysThrIleLysThrGluLysLeuSer-160

Hydrophilic Regions - Hopp-Woods

23-ThrSerGlyLysHisArgGlnProLysProLysGlnThrVal-36
 45-SerHisIleAspArgThrGlnGlySerGln-54
 96-LysLeuProArgThrAlaArgAspMetAlaAlaAlaSerArgLysIleProAspSerArgLeuLysAlaGly-119
 149-SerSerGlyLysThrIleLysThrGluLysLeuSer-160

a211**AMPHI Regions - AMPHI**

18-ValGlyAsnGlyValAspGluPheGlyArgGlyAla-29
 57-GlnPheGluArgAla-61
 98-IleGluGlyPheAspLysIleAsnProAla-107

Antigenic Index - Jameson-Wolf

8-AsnGlnLeuGlyGlyArgAsnGlyThrAlaValGlyAsnGlyValAspGluPheGlyArgGlyAlaAspAsnGlnValGluPheLeuGlu-37
 44-GlyAlaSerGlyArgAlaAla-50
 73-GlyGluAspAspValVal-78
 100-GlyPheAspLysIleAsnProAlaVal-108
 141-ArgTyrHisProLysLeuHisAspGlyAsnGlnAsnGlyLysArgHisGlyLysLeuHisHisArgAla-163
 169-CysGlnSerAlaGly-173

Hydrophilic Regions - Hopp-Woods

10-LeuGlyGlyArgAsnGlyThr-16
 21-GlyValAspGluPheGlyArgGlyAlaAspAsnGlnValGluPheLeuGlu-37
 73-GlyGluAspAspValVal-78
 100-GlyPheAspLysIleAsn-105
 142-TyrHisProLysLeuHisAspGlyAsnGlnAsnGlyLysArgHisGlyLysLeuHisHis-161

a212**AMPHI Regions - AMPHI**

6-TrpAsnGlyIleProAspIleArgThr-14

 16-AspGlnThrIleArgLysHisAlaHis-24
 40-PheGlnThrAlaGlnAsp-45
 63-CysLeuGlnPheAspSerIleAsnLeuIleGluHisIle-75
 89-ThrArgArgLeuHisGluHis-95
 199-ArgLeuLeuGlyHis-203
 238-HisAsnHisLeuTyrArgSerIleThrGlnAlaGluAlaGluLysIle-253
 262-TyrAlaGluProLeuCysGlyLeu-269
 397-TrpAsnGluAlaGluGluAla-403
 439-AspSerProAspHis-443

 445-ProLeuValGlyAlaLeuGlyAspIleAlaAlaMetGlnGlnThr-459
 481-AlaTyrAlaAsnThrAlaHisGlyThrArgGlyLeu-492
 506-IleLeuGlyLeuPro-510

512-ProLeuSerLysArgLeuArg-518

Antigenic Index - Jameson-Wolf

10-ProAspIleArgThrLeuAspGlnThrIleArgLysHisAlaHisProLeu-26
 33-ProAspAsnGlnIleProAsnPhe-40

 42-ThrAlaGlnAspAlaSerAspAlaGluCysArgLeuLysHisArgLeuAspGln-59
 85-ProProSerArgThrArgArgLeuHisGlu-94
 105-AlaIleProGlnThrGluSerLysProAspLysProTrp-117
 120-LeuProGlnThrSerGluArgGlnLysProGluHis-131
 158-LeuGluAlaArgLysAlaAlaGln-165
 168-SerGlyAsnArgGlnGly-173
 178-LysIleSerProHisAspThrGluGlnThrGlu-188
 193-GlyTyrGlyTyrThrLys-198

 205-LeuProGluSerGluThrTrpGlyGlyAsnGly-215
 220-AsnTyrSerArgThrGluGlnGlnArgAsnHisGluLeuGlyLeu-234

 236-LysHisHisAsnHisLeu-241
 245-IleThrGlnAlaGluAlaGluLysIleAla-254
 258-LeuAsnThrProTyrAla-263
 294-LeuHisGluAspThrProLeu-300

 302-AspIleSerHisAspGlyGluLysTrpIle-311
 328-ThrGlyAlaAsnSerProTyrLeuPro-336
 346-ArgGlnIleArgGlyGlnThrGlyLeuThrProSerThrProPheSerGluGlnLeuArg-365
 376-ProSerTrpHisGly-380
 391-AsnSerSerHisThrGlyTrpAsnGluAlaGluGluAlaSerAsnArgGlnAla-408
 424-AsnProAsnProGlnLysHisGlnGly-432
 436-IleArgCysAspSerProAspHisLeuPro-445

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464-AlaLeuAspLysAsnTyrArgIleAspAla-473

486-AlaHisGlyThrArgGlyLeuAla-493

511-HisProLeuSerLysArgLeuArgHis-519

522-HisProAsnArgAlaIle-527

531-IleValArgArgLysAspLeuThrPro-539

Hydrophilic Regions - Hopp-Woods

10-ProAspIleArgThrLeuAspGlnThrIleArgLysHisAla-23

44-GlnAspAlaSerAspAlaGluCysArgLeuLysHisArgLeuAspGln-59

87-SerArgThrArgArgLeuHisGlu-94

105-AlaIleProGlnThrGluSerLysProAspLys-115

122-GlnThrSerGluArgGlnLysProGluHis-131

158-LeuGluAlaArgLysAlaAlaGln-165

180-SerProHisAspThrGluGlnThrGlu-188

206-ProGluSerGluThr-210

222-SerArgThrGluGlnGlnArgAsnHisGlu-231

246-ThrGlnAlaGluAlaGluLysIleAla-254

294-LeuHisGluAspThrProLeu-300

303-IleSerHisAspGlyGluLysTrpIle-311

346-ArgGlnIleArgGly-350

398-AsnGluAlaGluGluAlaSerAsnArgGlnAla-408

426-AsnProGlnLysHisGlnGly-432

436-IleArgCysAspSerProAsp-442

467-LysAsnTyrArgIleAspAla-473

513-LeuSerLysArgLeuArgHis-519

531-IleValArgArgLysAspLeuThrPro-539

a214-1**AMPHI Regions - AMPHI**

6-CysLysLeuPheValLeuIle-12

69-ValThrArgGlyGlyLysGlyGlyGluSerVal-79

88-PheSerGlnThrLeuAsp-93

122-LysValGlnArgGlyGlyAspVal-129

150-ThrLysSerGlyAlaLysSerAlaSerLys-159

Antigenic Index - Jameson-Wolf

23-LeuGlnSerAspSerArgGlnProIle-31

33-IleGluAlaAspGlnGlySerLeuAspGlnAlaAsnGlnSerThrThrPheSerGlyAsn-52

71-ArgGlyGlyLysGlyGlyGluSerValArgAlaGluGlySerProValArgPheSerGlnThrLeuAspGlyGlyLysGlyThrValArgGlyGlnAlaAsnAsn-105

119-GlyAsnAlaLysValGlnArgGlyGlyAspValAlaGlu-131

137-TyrAsnThrLysThrGluVal-143

148-GlySerThrLysSerGlyAlaLysSerAlaSerLysSerGlyArgValSerVal-165

168-GlnProSerSerThrGlnLysSerGlu-176

Hydrophilic Regions - Hopp-Woods

25-SerAspSerArgGlnProIle-31

33-IleGluAlaAspGlnGlySerLeuAspGlnAlaAsn-44

71-ArgGlyGlyLysGlyGlyGluSerValArgAlaGluGlySerPro-85

92-LeuAspGlyGlyLysGlyThrValArgGlyGlnAla-103

121-AlaLysValGlnArgGlyGlyAspValAlaGlu-131

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148-GlySerThrLysSerGlyAlaLysSerAlaSerLysSerGlyArg-162
 171-SerThrGlnLysSerGlu-176

a215**AMPHI Regions - AMPHI**

21-SerLeuSerAlaTrpLeuGlyArgIle-29
 67-SerSerLysGlyAlaLysGlnPheProGlu-76

Antigenic Index - Jameson-Wolf

3-ValArgTrpArgTyrGly-8
 28-ArgIleSerGluValGluIleGluGluValArgLeuAsnProAspGluProGlnTyrThrMetAspGlyLeuA
 spGlyArgArgPheAspGluGlnGlyTyrLeuLys-63
 65-HisLeuSerSerLysGlyAlaLysGlnPheProGluSerSerAspIleHisPheAspSerProHisLeu-87
 99-ValGlySerAspGluAlaValTyrHisThrGluAsnLysGlnValLeuPhe-115
 123-LysThrAlaAspGlyLysArgGlnAlaGlyLysValGluAlaGluLysLeuHisValAspThrGluSerGln
 TyrAlaGlnThrAspThrProVal-154
 160-AlaSerHisGlyGlnAlaGlyGlyMetThrTyrAspHisLysThrGly-175
 179-PheSerSerLysValLys-184
 187-IleTyrAspThrLysAspMet-193

Hydrophilic Regions - Hopp-Woods

29-IleSerGluValGluIleGluGluValArgLeuAsnProAspGluProGlnTyr-46
 49-AspGlyLeuAspGlyArgArgPheAspGlu-58
 65-HisLeuSerSerLysGlyAlaLysGlnPheProGluSerSerAspIleHisPhe-82
 99-ValGlySerAspGluAlaValTyr-106
 108-ThrGluAsnLysGlnValLeu-114
 123-LysThrAlaAspGlyLysArgGlnAlaGlyLysValGluAlaGluLysLeuHisValAspThrGluSerGln
 TyrAla-148
 170-TyrAspHisLysThr-174
 187-IleTyrAspThrLysAspMet-193

a216**AMPHI Regions - AMPHI**

21-AlaGluGlyLeuArgGluIleAlaAlaAspLeu-31
 62-ArgLysMetAlaAla-66
 167-LeuGlyAspAlaLeuAlaVal-173
 203-ValAlaAspIleMetHis-208
 218-LeuGlyThrProLeuLysGlu-224
 244-GlyArgLeuLysGlyVal-249
 253-GlyAspLeuArgArgLeuPheGlnGluCysAspAsnPheThrGlyLeuSerIle-270
 274-MetHisThrHisProLysThrIleSerAla-283
 292-LysValMetGlnAlaAsn-297

Antigenic Index - Jameson-Wolf

4-AlaGlyAsnGluLysTyrLeuAspTrpAlaArg-14
 16-ValLeuHisThrGluAlaGluGlyLeuArgGluIleAlaAlaAspLeuAspGlu-33
 45-CysLysGlyArgVal-49
 53-GlyMetGlyLysSerGlyHisIleGlyArgLysMetAla-65
 82-GluAlaAlaHisGlyAspLeu-88
 92-ValAspAsnAspVal-96
 101-SerAsnSerGlyGluSerAspGluIle-109
 115-AlaLeuLysArgLysAspIle-121
 127-ThrAlaArgProAspSerThrMetAlaArgHisAlaAsp-139
 146-ValSerLysGluAlaCysPro-152
 179-ArgAlaPheThrProAspAspPheAla-187
 190-HisProAlaGlySerLeuGlyLys-197
 205-AspIleMetHisLysGlyGlyGlyLeuProAla-215

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218-LeuGlyThrProLeuLysGluAlaIle-226
 229-MetSerGluLysGlyLeu-234
 239-ValThrAspGlyGlnGlyArgLeuLysGly-248
 250-PheThrAspGlyAspLeuArgArgLeuPheGlnGluCysAspAsnPheThr-266
 277-HisProLysThrIleSerAlaGluArgLeuAlaThrGluAlaLeuLys-292
 305-ThrAspAlaAspGly-309

Hydrophilic Regions - Hopp-Woods

5-GlyAsnGluLysTyrLeuAspTrpAlaArg-14
 16-ValLeuHisThrGluAlaGluGlyLeuArgGluIleAlaAlaAspLeuAspGlu-33
 45-CysLysGlyArgVal-49
 58-GlyHisIleGlyArgLysMetAla-65
 102-AsnSerGlyGluSerAspGluIle-109
 115-AlaLeuLysArgLysAspIle-121
 128-AlaArgProAspSerThrMetAlaArgHisAlaAsp-139
 146-ValSerLysGluAlaCys-151
 179-ArgAlaPheThrProAspAspPheAla-187
 220-ThrProLeuLysGluAlaIle-226
 229-MetSerGluLysGlyLeu-234
 241-AspGlyGlnGlyArgLeuLys-247
 253-GlyAspLeuArgArgLeuPheGlnGluCysAspAsn-264
 279-LysThrIleSerAlaGluArgLeuAlaThrGluAlaLeuLys-292
 305-ThrAspAlaAspGly-309

a218**AMPHI Regions - AMPHI**

9-AlaLysValValSerThrMet-15
 24-AlaMetAspGluIleHisSer-30
 78-AlaArgSerTrpTrpArgAsnLeuHisGlyAlaPheGlyThrTrpValSerLeuIleLeu-97
 111-TrpGlyGlyLysPheValGlnAlaTrpSerGlnPhePro-123
 176-AspGluProMetThrLeuGluThrValAspArgPheAlaArgXxxAsnArgPheGlnArgAlaLeuSerAla-199

Antigenic Index - Jameson-Wolf

13-SerThrMetProArgAsnGlnGlyTrp-21
 35-GlySerThrGlyAsp-39
 62-ValLysArgArgGlyIleLysAla-69
 71-LeuLeuProProLysGlyArgAlaArgSerTrpTrp-82
 86-HisGlyAlaPheGly-90
 123-ProAlaGlyLysTrpGlyValGluProAsnProVal-134
 143-ValLeuAsnAspGlyLysValLysGlu-151
 167-ThrValGlyLysAspGlyIleAsnProAspGluProMetThr-180
 182-GluThrValAspArgPheAlaArgXxxAsnArgPheGlnArg-195
 201-PheAlaGlnArgArgGlyArgArgMetAspPhe-211

Hydrophilic Regions - Hopp-Woods

63-LysArgArgGlyIleLys-68
 74-ProLysGlyArgAla-78
 143-ValLeuAsnAspGlyLysValLysGlu-151
 167-ThrValGlyLysAspGlyIleAsnProAspGluProMetThr-180
 182-GluThrValAspArgPheAlaArgXxxAsnArgPheGlnArg-195
 201-PheAlaGlnArgArgGlyArgArgMetAspPhe-211

a225-1**AMPHI Regions - AMPHI**

23-LeuAlaAspGluLeuThrAsn-29
 37-IleLeuArgGlnPhe-41

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155-AsnAlaMetGlyLeu-159
 180-PheMetGlnHisIlePheLys-186
 215-GlyAspMetValXxxPheArgThrLeuGlyGlySerArg-227
 246-ThrGlyLysAsnIle-250

Antigenic Index - Jameson-Wolf

22-AlaLeuAlaAspGluLeuThr-28
 32-SerSerArgGluGlnIleLeu-38
 41-PheAlaGluAspGluGlnProVal-48
 52-AsnArgXxxProAlaArgArgAlaGlyAsnAlaAspGluLeuIle-66
 71-GlyLeuAsnGluGlnProVal-77
 81-AsnArgXxxProAlaArgArgAlaGlyAsnAlaAspXxx-93
 100-GlyLeuAsnGluGlnProVal-106
 110-AsnArgValProAlaArgArgAlaGlyAsnAlaAspGluLeuIle-124
 129-GlyLeuAsnGluGlnProVal-135
 137-ProValAsnArgAlaProAlaArgArgAlaGlyAsnAlaAspGluLeuIle-153
 173-ThrGlyPheAspCysSerGly-179
 193-LeuProArgThrSerAlaGluGlnAlaArgMet-203
 205-ThrProValAlaArgSerGluLeuGlnProGlyAspMetValXxx-219
 222-ThrLeuGlyGlySerArgIle-228
 242-HisAlaProArgThrGlyLysAsnIleGlu-251
 254-SerLeuSerHisLysTyrTrpSerGlyLys-263
 268-ArgArgValLysLysAsnAspProSerArgPhe-278

Hydrophilic Regions - Hopp-Woods

22-AlaLeuAlaAspGluLeuThr-28
 32-SerSerArgGluGlnIleLeu-38
 41-PheAlaGluAspGluGlnPro-47
 53-ArgXxxProAlaArgArgAlaGlyAsnAlaAspGluLeuIle-66
 82-ArgXxxProAlaArgArgAlaGlyAsnAla-91
 112-ValProAlaArgArgAlaGlyAsnAlaAspGluLeuIle-124
 140-ArgAlaProAlaArgArgAlaGlyAsnAlaAspGluLeuIle-153
 195-ArgThrSerAlaGluGlnAlaArgMet-203
 207-ValAlaArgSerGluLeuGlnPro-214
 245-ArgThrGlyLysAsnIleGlu-251
 268-ArgArgValLysLysAsnAspProSerArg-277

a226**AMPHI Regions - AMPHI**

44-LeuIleAlaTyrLeuLys-49
 61-AlaAlaGlnPheIleAspPheTrpLeu-69
 98-GlnLeuAlaGlySerValThrGlyIleValThr-108
 141-ArgSerIleGlyGlyIleProAlaIleThr-150
 157-AlaGlyLeuValGlyGlnIleAlaGlyTyrLys-167
 197-GluArgSerArgArg-201

Antigenic Index - Jameson-Wolf

3-GluIleLeuArgGlnProSer-9
 25-ValArgThrArgThrGlyAsnIle-32
 81-TyrGlnAsnArgArgLysIle-87
 117-GlyAlaGluArgGluVal-122
 128-SerLysSerValThrAsn-133
 139-IleThrArgSerIleGlyGly-145
 167-LysMetLeuLysAsnThrVal-173
 195-SerLeuGluArgSerArgArgMetAla-203

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Hydrophilic Regions - Hopp-Woods

25-ValArgThrArgThr-29
 82-GlnAsnArgArgLysIle-87
 117-GlyAlaGluArgGluVal-122
 195-SerLeuGluArgSerArgArgMetAla-203

a227**AMPHI Regions - AMPHI**

36-GlyValLeuPheAlaLeuLeuGlnAla-44
 52-LeuGlnGlnLeuThrAspAlaLeu-59
 74-ValIleSerTyrLeuAspLeuIleAlaAspAspTrpPheSer-87

a228**AMPHI Regions - AMPHI**

24-GluValLysGluAlaValGlnAlaValGlu-33
 40-AlaAlaSerAlaAlaGluSerAlaAlaSerAlaValGluGluAlaLysAspGlnValLysAspAla-61
 78-GluAlaValThrGluAlaAlaLysAspThrLeuAsnLysAlaAlaAspAlaThrGlnGluAlaAlaAspLysMetLysAspAlaAla-106

Antigenic Index - Jameson-Wolf

18-SerGlnGluAlaLysGlnGluValLysGluAlaValGln-30
 32-ValGluSerAspValLysAspThrAlaAlaSerAlaAlaGluSerAlaAlaSerAlaValGluGluAlaLysAspGlnValLysAspAlaAlaAlaAspAlaLysAlaSerAlaGluGluAlaValThrGluAlaLysGluAlaValThrGluAlaAlaLysAspThrLeuAsnLysAlaAlaAspAlaThrGlnGluAlaAlaAspLysMetLysAspAlaAlaLys-107

Hydrophilic Regions - Hopp-Woods

18-SerGlnGluAlaLysGlnGluValLysGluAlaValGln-30
 32-ValGluSerAspValLysAspThrAlaAlaSerAlaAlaGluSerAlaAlaSerAlaValGluGluAlaLysAspGlnValLysAspAlaAlaAlaAspAlaLysAlaSerAlaGluGluAlaValThrGluAlaLysGluAlaValThrGluAlaAlaLysAspThrLeuAsnLysAlaAlaAspAlaThrGlnGluAlaAlaAspLysMetLysAspAlaAlaLys-107

a230-1**AMPHI Regions - AMPHI**

6-GluLysTyrArgThr-10
 49-AspHisSerIleAsnAsn-54
 56-IleGlnAsnGluGln-60
 73-GlnSerLeuLeuGln-77
 81-LeuLysGlnGlyAlaLys-86
 96-GlnIleLysGlnIleIle-101
 133-PheValGluGluIleArgAspGlnPhe-141
 144-GlnAsnLeuValAsnLeuVal-150
 161-AlaGluGlnLeuIleArgLeuThrGlnValAsnArgThrIleArg-175
 184-PheIleAlaGlnVal-188
 194-AspLeuGlnLysPheTyrAsn-200
 234-GluValLysAsnAlaPheGluGluArgValAlaArgLeu-246
 272-ValAlaAspPheAsnLys-277
 284-AspAspAlaPheAsnHisProSerSerLeuAlaGluAla-296
 319-SerGlyMetProGluAsnLeuIleAsnAlaVal-329
 398-LeuAsnGlyGlyLys-402
 426-GluAlaTyrAlaGluLeu-431
 444-ValArgLeuIleGlyLeuProAlaPro-452
 456-GluValGlnAlaValThrProProAspAspIleAla-467
 488-LeuLeuIleArgTyrPheAsn-494

Antigenic Index - Jameson-Wolf

4-SerIleGluLysTyrArgThrProAla-12

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32-SerHisProGlyAlaAsp-37
 42-ValGlyAspGluLysIleSerAspHisSerIle-52
 56-IleGlnAsnGluGlnAlaAspGlyGlyGlyProSerArgAspAlaVal-71
 80-TyrLeuLysGlnGlyAla-85
 92-ValSerSerGluGlnIleLys-98
 101-IleValAspAspProAsnPheHisAspAlaAsnGlyLysPheAsp-115
 122-TyrLeuSerGlnArgHisMetSerGluAspGlnPheValGluGluIleArgAsp-139
 169-GlnValAsnArgThrIleArgSerHisThrPheAsnProAspGluPhe-184
 189-LysValSerGluAlaAspLeu-195
 199-TyrAsnAlaAsnLysLysAspTyrLeu-207
 223-AspPheAlaAspLysGlnThrValSerGluThrGluValLysAsnAlaPheGluGluArgValAlaArg-245
 247-ProAlaAsnGluAlaLysProSerPheGluGlnGluLysAlaAlaValGluAsnGluLeuLysMetLysLysAlaValAlaAspPheAsnLysAlaLysGluLysLeuGlyAspAspAlaPheAsnHisProSerSerLeuAlaGluAlaAlaLysAsnSerGlyLeuLysValGluThrGlnGluThrTrpLeuSerArgGlnAspAlaGlnMetSerGlyMetProGluAsn-324
 330-PheSerAspAspValLeuLysLysLysHisAsnSerGlu-342
 355-ArgAlaLysGluValArgGluGluLysThrLeuPro-366
 368-AlaGluAlaLysAspAlaValArg-375
 377-AlaTyrIleArgThrGluAlaAlaLysLeuAlaGluAsnLysAlaLysAspValLeu-395
 399-AsnGlyGlyLysAlaValAsp-405
 417-GlnGlnAlaArgGlnSerMetProProGluAlaTyr-428
 432-LeuLysAlaLysProAlaAsnGlyLysProAla-442
 459-AlaValThrProProAspAspIleAla-467
 476-AlaLeuAlaGlnGlnGlnSerAlaAsnThrPhe-486
 493-PheAsnGlyLysIleLysGlnThrLysGlyAlaGlnSerValAspAsnGlyAspGlyGln-512

Hydrophilic Regions - Hopp-Woods

6-GluLysTyrArgThr-10
 42-ValGlyAspGluLysIleSerAsp-49
 56-IleGlnAsnGluGlnAlaAspGlyGlyGlyProSerArgAspAlaVal-71
 92-ValSerSerGluGlnIleLys-98
 101-IleValAspAspProAsnPhe-107
 110-AlaAsnGlyLysPheAsp-115
 126-ArgHisMetSerGluAspGlnPheValGluGluIleArgAsp-139
 189-LysValSerGluAlaAspLeu-195
 200-AsnAlaAsnLysLysAspTyrLeu-207
 223-AspPheAlaAspLysGlnThrValSerGluThrGluValLysAsnAlaPheGluGluArgValAlaArg-245
 247-ProAlaAsnGluAlaLysProSerPheGluGlnGluLysAlaAlaValGluAsnGluLeuLysMetLysLysAlaValAlaAspPheAsnLysAlaLysGluLysLeuGlyAspAspAlaPheAsn-288
 292-SerLeuAlaGluAlaAlaLysAsnSerGlyLeuLysValGluThrGlnGlu-308
 310-TrpLeuSerArgGlnAspAlaGlnMet-318
 333-AspValLeuLysLysLysHisAsnSer-341
 355-ArgAlaLysGluValArgGluGluLysThrLeuPro-366
 368-AlaGluAlaLysAspAlaValArg-375
 377-AlaTyrIleArgThrGluAlaAlaLysLeuAlaGluAsnLysAlaLysAspValLeu-395
 417-GlnGlnAlaArgGlnSerMetPro-424
 432-LeuLysAlaLysProAlaAsnGly-439
 461-ThrProProAspAspIleAla-467
 496-LysIleLysGlnThrLysGlyAlaGlnSerValAspAsnGlyAspGlyGln-512

a231-1**AMPHI Regions - AMPHI**

7-IleAsnArgProTyrGlnLysProAlaGluLeu-17
 98-ArgIlePheSerPheProGln-104

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209-AlaValAspAsnValLysGlyValAlaVal-218
 228-AlaValAlaGlyPheArgArgCysSerAlaAla-238
 263-LeuAlaAlaValProArgIleThrGln-271
 281-LysProPheHisAspPhePheAsnLeu-289

Antigenic Index - Jameson-Wolf

1-MetSerLysArgLysSerIleAsnArgProTyrGlnLysProAlaGlu-16
 18-ProProLeuGlnAsnAsnProProPheTyrArgLysAsnArgArgLeuAsn-34
 39-AlaAspGlyGlyCysAlaSerProGlnLysCysArgAlaArgGlyPheGln-55
 90-ProAlaValArgProArgArgLeuArg-98
 135-MetProArgArgProVal-140
 150-PheAlaAspArgAsnLeuArg-156
 166-GluHisAlaAspAlaAsp-171
 174-AlaPheArgArgArgAlaGlnVal-181
 183-AlaArgThrArgAla-187
 194-ArgArgValAspIleArgHisProAspPhe-203
 211-AspAsnValLysGly-215
 231-GlyPheArgArgCysSerAlaAlaGlyGlyArgValGlyThr-244
 246-ValProCysArgAlaGluTyrValGluTyrGlyAsnArgArgProHisArgLeuAlaAla-265
 269-IleThrGlnArgThrGlnLysArgGlnGlyAspGlyLysProPhe-283
 294-MetProMetProSerGluHis-300

Hydrophilic Regions - Hopp-Woods

1-MetSerLysArgLysSerIleAsn-8
 10-ProTyrGlnLysProAlaGlu-16
 26-PheTyrArgLysAsnArgArg-32
 45-SerProGlnLysCysArgAlaArgGly-53
 92-ValArgProArgArgLeuArg-98
 136-ProArgArgProVal-140
 150-PheAlaAspArgAsnLeuArg-156
 166-GluHisAlaAspAlaAsp-171
 174-AlaPheArgArgArgAlaGlnVal-181
 183-AlaArgThrArgAla-187
 194-ArgArgValAspIleArgHis-200
 231-GlyPheArgArgCysSerAlaAlaGlyGlyArgValGlyThr-244
 246-ValProCysArgAlaGluTyr-252
 254-GluTyrGlyAsnArgArgProHisArg-262
 269-IleThrGlnArgThrGlnLysArgGlnGlyAspGlyLysProPhe-283

a232**AMPHI Regions** - AMPHI

23-GlnPheLeuGlyAlaPheAsnAspAsnVal-32
 55-GlyGlnMetLeuAsn-59
 74-SerLeuSerGlyGlnLeuGlyAsnLysPheAspLysAlaValLeuAlaArgTrpAlaLysValLeuGluMetIleIleMet-100
 127-ThrLeuPheGlyProLeuLysTyr-134
 160-AlaIleLeuPheGly-164
 167-LeuGlyThrAlaValAlaGlyValProProTyrIleValGlyIleLeuVal-183
 214-ValArgGlyThrLysSerLeuLeuArgGlu-223
 251-LeuProThrPheThrGln-256
 319-ArgPheGluGlyLeuAsn-324
 340-AlaValMetThrLeuIleGlyPhePheGlyGlyPhePheSerValProLeuTyrThrTrpLeu-360

Antigenic Index - Jameson-Wolf

1-MetTyrAlaLysLysGlyGlyLeuGlyLeuValLysSerArgArgPhe-16
 75-LeuSerGlyGlnLeuGlyAsnLysPheAspLys-85

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139-AspTyrLeuAspAspLysGluLeuMetMet-148
 200-ValProAlaLysAlaAlaAspThrGlnIle-209
 215-ArgGlyThrLysSerLeuLeuArgGluThrValArgHisLysPro-229
 258-HisLeuGlyGlyAsnAspAsnVal-265
 286-LysPheSerArgGluArgLeuArg-293
 316-HisGlyHisArgPheGluGly-322
 363-AlaSerSerGluThrPheArgAlaArgAla-372
 420-IleLysArgGluArgArgPheLeu-427
 431-AlaIleArgLysLysPro-436

Hydrophilic Regions - Hopp-Woods

2-TyrAlaLysLysGlyGly-7
 11-ValLysSerArgArgPhe-16
 81-AsnLysPheAspLys-85
 140-TyrLeuAspAspLysGluLeuMet-147
 201-ProAlaLysAlaAlaAspThrGlnIle-209
 215-ArgGlyThrLysSerLeuLeuArgGluThrValArgHis-227
 286-LysPheSerArgGluArgLeuArg-293
 318-HisArgPheGluGly-322
 366-GluThrPheArgAlaArgAla-372
 420-IleLysArgGluArgArgPheLeu-427
 431-AlaIleArgLysLysPro-436

a233**AMPHI Regions - AMPHI**

61-PheAlaAspLysValGlnThr-67
 71-GlnValArgValTrpLysAsn-77
 88-AsnGlyValAlaLysLeuLeuGluThr-96
 119-AlaLeuThrArgLeuIleGluGlnAlaGlyAsnAla-130
 139-ProValAlaAspThrLeuLysCysAlaAspGlyGlyAsn-151
 180-AlaAlaGluAsnLeuAspGlyIleThrAsp-189

Antigenic Index - Jameson-Wolf

1-MetLysArgLysAsnIle-6
 16-AlaArgPheGlyAlaAspLysProLysGlnTyrValGluIleGlySerLysThrValLeu-35
 43-GluArgHisGluAlaValAsp-49
 56-SerProGluAspThrPheAlaAspLysValGln-66
 75-TrpLysAsnGlyGlyGlnThrArgAlaGluThrValArgAsnGlyVal-90
 100-AlaGluThrAspAsn-104
 109-AspAlaAlaArgCys-113
 115-LeuProSerGluAlaLeu-120
 123-LeuIleGluGlnAlaGlyAsnAlaAlaGluGlyGly-134
 142-AspThrLeuLysCysAlaAspGlyGlyAsnIle-152
 155-ThrValGluArgThrSerLeu-161
 182-GluAsnLeuAspGlyIleThrAspGluAlaSerAlaValGluLysLeuGlyIle-199
 206-GlyAspAlaArgAsnLeuLysLeuThrGlnProGlnAspAlaTyr-220

Hydrophilic Regions - Hopp-Woods

1-MetLysArgLysAsnIle-6
 18-PheGlyAlaAspLysProLysGlnTyrVal-27
 43-GluArgHisGluAlaValAsp-49
 56-SerProGluAspThrPheAlaAspLysValGln-66
 79-GlyGlnThrArgAlaGluThrValArg-87
 100-AlaGluThrAspAsn-104
 127-AlaGlyAsnAlaAlaGlu-132
 142-AspThrLeuLysCysAlaAsp-148

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182-GluAsnLeuAspGlyIleThrAspGluAlaSerAlaValGluLysLeuGlyIle-199
 206-GlyAspAlaArgAsnLeuLys-212

a234-2**AMPHI Regions - AMPHI**

26-ArgSerLeuGluValGluLysValAlaSer-35
 68-AspArgLeuGlySerGln-73
 83-GlnGlnThrAsnArgPheAsnValLeuAsnArgThrAsn-95
 121-GlyAspValThrGluPhe-126
 206-AlaValAsnSerLeuValGlnAlaValAsp-215

Antigenic Index - Jameson-Wolf

21-AlaThrGluSerSerArgSerLeuGluValGluLysValAlaSer-35
 51-ThrPheAspAsnArgSerSerPhe-58
 62-IlePheSerAspGlyGluAspArgLeuGlySerGlnAla-74
 83-GlnGlnThrAsnArgPheAsnValLeuAsnArgThrAsn-95
 99-LeuLysGlnGluSerGlyIleSerGlyLysAlaHisAsnLeuLysGlyAlaAspTyr-117
 121-GlyAspValThrGluPheGlyArgArgAspValGlyAsp-133
 140-LeuGlyArgGlyLysSerGlnIle-147
 160-AsnThrSerGluIle-164
 169-GlnGlyAlaGlyGlu-173
 175-AlaLeuSerAsnArgGluIle-181
 185-GlyGlyThrSerGlyTyrAspAlaThrLeuAsnGlyLysValLeu-199
 214-ValAspAsnGlyAlaTrpGlnProAsnArg-223

Hydrophilic Regions - Hopp-Woods

21-AlaThrGluSerSerArgSerLeuGluValGluLysValAla-34
 52-PheAspAsnArgSerSerPhe-58
 62-IlePheSerAspGlyGluAspArgLeuGlySerGlnAla-74
 99-LeuLysGlnGluSerGlyIleSerGlyLysAlaHisAsn-111
 122-AspValThrGluPheGlyArgArgAspValGlyAsp-133
 141-GlyArgGlyLysSer-145
 176-LeuSerAsnArgGluIle-181

a235**AMPHI Regions - AMPHI**

8-LeuAlaAlaValLeuAlaLeu-14
 18-GlnValGlnLysAlaProAsp-24
 86-LeuThrAsnAlaAlaAspIle-92
 95-ValArgProGluLysLeuHisGlnIlePhe-104
 120-SerTyrGlnIleLeuAspSerValThrThr-129
 165-GlyAlaLeuValSerAlaValValAsnGlnIleAlaAsnSerLeuThr-180
 187-SerLysThrAlaAlaTyrAsnLeuLeuSerProTyr-198

Antigenic Index - Jameson-Wolf

20-GlnLysAlaProAspPheAspTyrThrSerPheLysGluSerLysProAla-36
 43-ProLeuAsnGluSerProAspValAsnGlyThr-53
 62-AlaProLeuSerGlu-66
 79-GluThrPheLysGlnAsnGlyLeuThrAsn-88
 93-HisAlaValArgProGluLysLeu-100
 131-SerAlaLysAlaArgLeuValAspSerArgAsnGlyLysGluLeuTrpSerGlySerAlaSerIleArgGlu
 GlySerAsnAsnSerAsnSer-161
 178-SerLeuThrAspArgGlyTyrGlnValSerLysThrAla-190
 202-GlyIleLeuLysGlyProArgPheValGluGluGlnProLys-215

Hydrophilic Regions - Hopp-Woods

20-GlnLysAlaProAspPheAsp-26

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29-SerPheLysGluSerLysPro-35
 44-LeuAsnGluSerProAspVal-50
 93-HisAlaValArgProGluLysLeu-100
 131-SerAlaLysAlaArgLeuValAspSerArgAsnGlyLysGluLeuTrp-146
 150-AlaSerIleArgGluGlySerAsnAsnSer-159
 179-LeuThrAspArgGlyTyrGln-185
 207-ProArgPheValGluGluGlnProLys-215

a236**AMPHI Regions - AMPHI**

11-LeuCysThrAlaPheAlaAspGlyPhe-19
 107-PheAlaGlyPheAlaAspCysArgProPhe-116
 145-AlaAspAspValProArgPhePheAlaGlyGlu-155
 168-ArgAspValValGlnGlyGlyLeu-175
 215-ValGluGlyIleThrArgIle-221
 245-IleArgLeuLeuHisGlyIlePheAsnArgIleGluValAla-258
 316-ValAlaAspGlyPheArgHisPhe-323

Antigenic Index - Jameson-Wolf

42-GlyPheSerGlyAsnGlyLysPhe-49
 58-ArgHisGlnGlnSerLysAlaGln-65
 77-PhePheArgArgGlyAsnPheGlyPheGlyLeuGlnGlyArgThrAspGlyPhe-94
 98-GlnArgLeuAspGlyGlyGlyTyr-105
 109-GlyPheAlaAspCysArgProPhe-116
 126-ValAspGlyArgGluLeuValProSerMetGluLys-137
 144-AlaAlaAspAspValPro-149
 155-GluAlaGlnAsnArgCysAsnGlnGluAsnGlnAlaAlaArgAspValValGlnGlyGlyLeu-175
 195-IleGluValGluArgAlaGlnValPheArgAlaGluArgAsnHis-209
 213-GlyLysValGluGlyIleThrArg-220
 222-LysIleThrGlyAsnAlaPheLeu-229
 261-GlyLysGlnLysAlaGlnGly-267
 292-IleGlyGlyCysArgProGlnAlaGlnAspValArgAla-304
 310-PheLeuArgArgAspAspValAlaAspGly-319

Hydrophilic Regions - Hopp-Woods

89-GlyArgThrAspGly-93
 98-GlnArgLeuAspGlyGlyGly-104
 127-AspGlyArgGluLeuValProSerMetGluLys-137
 144-AlaAlaAspAspValPro-149
 156-AlaGlnAsnArgCysAsnGlnGluAsnGlnAlaAlaArgAspValVal-171
 195-IleGluValGluArgAlaGlnValPheArgAlaGluArgAsnHis-209
 214-LysValGluGlyIleThrArg-220
 261-GlyLysGlnLysAlaGlnGly-267
 295-CysArgProGlnAlaGlnAspValArgAla-304
 311-LeuArgArgAspAspValAlaAspGly-319

a239**AMPHI Regions - AMPHI**

49-PheArgLeuIleGlnSerCys-55
 72-AsnAlaHisArgLysGln-77
 123-ProGlyPheAsnAlaLeuProAlaIlePhe-132
 165-SerSerAsnGluTrp-169
 221-PheCysAlaThrIleCysAlaSerLeuArg-230

Antigenic Index - Jameson-Wolf

6-GlyIleAlaArgAsnArgArgMetGlu-14
 19-CysArgArgProAspArgPheValValArgGlnThrArgLeuLeu-33

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52-IleGlnSerCysGluValGluPro-59
 66-HisAsnGlyLysSerGlyAsnAlaHisArgLysGlnGlnLysGluIle-81
 100-ProAlaValArgSerAlaThrArgLysThrAla-110
 132-PheArgGlyGlySerGlyLysSerAlaSer-141
 144-AlaAlaGlnArgGlyArgGlyAlaCys-152
 164-ArgSerSerAsnGluTrpLys-170
 173-ThrAlaLysArgProProSerPheArgArgHisMetThrCysGlyAsnThrAlaProThrSerSerSerSer
 ArgLeuIleLys-200
 209-ValAlaGlySerCysProArgSerArgValArgThr-220
 248-TrpArgLeuAsnArgSerSerPro-255

Hydrophilic Regions - Hopp-Woods

6-GlyIleAlaArgAsnArgArgMetGlu14
 20-ArgArgProAspArgPheValValArgGlnThrArg-31
 67-AsnGlyLysSerGlyAsnAlaHisArgLysGlnGlnLysGluIle-81
 102-ValArgSerAlaThrArgLysThrAla-110
 135-GlySerGlyLysSerAlaSer-141
 146-GlnArgGlyArgGlyAlaCys-152
 165-SerSerAsnGluTrpLys-170
 173-ThrAlaLysArgProProSerPheArgArgHisMet-184
 193-SerSerSerSerArgLeuIleLys-200
 211-GlySerCysProArgSerArgValArgThr-220
 251-AsnArgSerSerPro-255

a240**AMPHI Regions - AMPHI**

19-AlaAspValGlyArgPheLeuHis-26
 63-IleGlnCysLeuArgAsnHis-69
 87-AlaProLeuPheAlaValCysPro-94
 107-GlnGlyGluAspPheProArgAlaGlyIleGlnAsnHis-119
 154-ValPheArgGlyPheIleAlaArgGlyValGlnAlaValHisAsn-168
 188-PheLysArgLysPheGln-193

Antigenic Index - Jameson-Wolf

9-GlyThrGluThrArgArgGlnPheAla-17
 39-IleAlaHisGlyArgArgSerAspPheIleArg-49
 67-ArgAsnHisLysArgPheAspCysArgThrGlyPheAsp-79
 101-ValGlyGlyArgIleGlyGlnGlyGluAspPheProArgAlaGlyIleGlnAsnHisHisArgSerGly-123
 139-GlnGlyLeuAsnProLeuIleGluGlyLysAspAspVal-151
 173-ValProGlnAsnAspPheArg-179
 187-ValPheLysArgLysPhe-192
 201-AsnIleGlyLysSerAspAspValCysLys-210

Hydrophilic Regions - Hopp-Woods

10-ThrGluThrArgArgGlnPheAla-17
 41-HisGlyArgArgSerAspPheIleArg-49
 67-ArgAsnHisLysArgPheAspCys-74
 105-IleGlyGlnGlyGluAspPheProArg-113
 145-IleGluGlyLysAspAspVal-151
 187-ValPheLysArgLysPhe-192
 203-GlyLysSerAspAspValCysLys-210

a241-1**AMPHI Regions - AMPHI**

6-ThrArgAlaAlaLysHis-11
 35-ThrHisThrProHisGluProAlaSerSer-44

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71-LysMetProSerGluMetGluGlnThrLeu-80
 109-PheLeuIleGlyCysIleAlaHisThrPheAsnArgSerLeuLys-123
 126-PheHisAlaCysGlnArgMetValAlaVal-135
 195-HisIleAspArgIleAlaGlyIleLeuThrValGln-206
 229-PheValGlnLysLeuIleValGlyIleIleHis-239

Antigenic Index - Jameson-Wolf

1-MetProThrArgProThrArgAlaAlaLysHisProThrProProThrTrp-17
 23-CysProArgProProTyrArgProProSerValGlnThrHisThrProHisGluProAlaSerSerThrCysAlaAlaLysSerAlaAsnArgArgGluAsnPheHis-58
 68-ProSerAsnLysMetProSerGluMetGluGlnThrLeuPheArgArgHisGlnIleProProSerCysArgGlnSer-93
 119-AsnArgSerLeuLysAlaAspPhe-126
 147-ThrIleAspAspAsnIleAla-153
 166-PheAspPheAsnArgGluHisAlaArg-174
 176-PheAsnThrAspGlnLeu181
 188-ArgIleValGlyArgLysArgHisIleAspArgIleAla-200
 209-PheHisGlnArgGluAsnAla-215
 244-ArgAsnHisGlyIle-248
 251-AspSerHisIleCysProPheArgAsnSerArgLeuIle-263

Hydrophilic Regions - Hopp-Woods

1-MetProThrArgProThrArgAlaAlaLysHisProThr-13
 37-ThrProHisGluProAlaSer-43
 46-CysAlaAlaLysSerAlaAsnArgArgGluAsnPheHis-58
 70-AsnLysMetProSerGluMetGluGlnThrLeuPheArg-82
 120-ArgSerLeuLysAlaAspPhe-126
 166-PheAspPheAsnArgGluHisAlaArg-174
 188-ArgIleValGlyArgLysArgHisIleAspArgIleAla-200
 209-PheHisGlnArgGluAsnAla-215

a242**AMPHI Regions - AMPHI**

23-ProGluValAlaXxxGlnPheValAspPheValGlu-34
 43-GlyPheCysHisIleLeuGlnAsnLeuThrGly-53
 122-AsnProPhePheAspPhePheGlnAlaValVal-132
 137-HisGlnSerGlyPheGlyAspValPhe-145
 156-PheGluGlnGlyVal-160
 191-PheGlyHisThrArgLeuPheAspIleCys-200
 262-HisProPheAlaAspPheGlyAsnPheGlnAsnLeuLeuAlaLeu-276

Antigenic Index - Jameson-Wolf

13-HisPheGluGlnArgAlaGlyGlyIleAla-22
 52-ThrGlyHisGlyAla-56
 75-SerHisAlaAspIlePheProProArgCysPheGlyAspGlyPheAlaGlnArgGlyPhe-94
 98-TrpArgAlaAspGlnAlaGlnAsnArgAla-107
 137-HisGlnSerGlyPhe-141
 152-LeuProArgGlnPheGluGlnGlyVal-160
 164-AlaTyrAspGlyGlyPheGlyArgHisArgArgHisHis-176
 283-MetArgCysAspArgIleGly-289

Hydrophilic Regions - Hopp-Woods

13-HisPheGluGlnArgAlaGlyGlyIle-21
 98-TrpArgAlaAspGlnAlaGlnAsnArgAla-107
 155-GlnPheGluGlnGlyVal-160
 168-GlyPheGlyArgHisArgArgHisHis-176

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283-MetArgCysAspArgIleGly-289

a243**AMPHI Regions - AMPHI**

25-IlePheSerMetLeu-29

35-IleThrArgLeuAlaArgLysAlaValGlnArgLeuThrAlaSerHisIleGlnArgPheLeu-55

80-AspSerSerArgIleThrSerThrIleSerSer-90

Antigenic Index - Jameson-Wolf

29-LeuProSerAsnAlaPro-34

37-ArgLeuAlaArgLysAlaValGln-44

55-LeuThrGluSerLysThrGlyAlaAsnLysSerSerSerSerCysLysPro-71

77-SerAlaSerAspSerSerArgIle-84

102-SerThrThrGlyAlaValThrLysSer-110

Hydrophilic Regions - Hopp-Woods

37-ArgLeuAlaArgLysAlaValGln-44

55-LeuThrGluSerLysThrGlyAlaAsnLysSerSerSerSerCysLys-70

78-AlaSerAspSerSerArgIle-84

a244-1**AMPHI Regions - AMPHI**

13-IleAlaAlaLeuLeuArg-18

24-AsnAlaLeuGlnGluIleAsnGlnIleIleProGlnThr-36

72-PheAlaCysHisArgLeuHisArgLeu-80

102-LysCysPheLeuGlnLeuValGln-109

111-HisLeuHisAlaHis-115

189-IleSerArgLeuCysGlySerLeuPhe-197

206-CysLeuAspGlyPheHisArgLeuHis-214

217-AsnArgPhePheThr-221

245-TyrProArgLysIleArgThrPheSerArgAsnPheLysGlnArg-259

Antigenic Index - Jameson-Wolf

1-MetProSerGluAlaArgGlnAlaGlySerAspGly-12

20-ValTyrThrGlnAsnAla-25

35-GlnThrProSerGly-39

44-HisArgAsnHisSerArgAlaGlnHis-52

81-MetAspIleArgIle-85

91-PheArgIleAspPheLeuAsp-97

125-IleGlnLysArgHis-129

134-LeuAspArgGlnHisPheHisGlyLysLeuLeuSerGlyGluLeuValArg-150

179-GlnLeuGlyAsnProArgLeu-185

234-LeuLysThrAsnTrpLysSerLysSerSerTyrTyrProArgLysIleArgThrPheSerArgAsnPheLys

GlnArgGlnArgIleSerAsnSerPheSerAsnProLeuProLysLys-273

Hydrophilic Regions - Hopp-Woods

1-MetProSerGluAlaArgGlnAlaGlySerAspGly-12

46-AsnHisSerArgAlaGlnHis-52

81-MetAspIleArgIle-85

91-PheArgIleAspPheLeuAsp-97

236-ThrAsnTrpLysSerLysSer-242

247-ArgLysIleArgThrPheSerArgAsnPheLysGlnArgGlnArgIle-262

a246-2**AMPHI Regions - AMPHI**

39-AlaValAsnIleAlaGlnCysPheThr-47

60-ArgCysAlaGluValLeuValGluGlnPheAlaAsnLeuPhePhe-74

83-AspMetGlyArgPhe-87

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132-PheGlyCysAspAspValValAspAspPheAlaGlyPheGlyArgCysPheArgProVal-151
 156-GlnLeuGlyGlnValPhePheGln-163

Antigenic Index - Jameson-Wolf

1-MetHisGlyArgAsnGlyGlyThrGln-9
 18-GlnThrGlnArgThrCysPheSerAsnGlyGluValHisAlaThrGlnThrAspIleGlySer-38
 78-AspCysGlyHisHisAspMetGlyArg-86
 92-LeuAspAspGluLeuAla-97
 133-GlyCysAspAspValValAspAspPheAlaGlyPheGlyArgCysPheArg-149
 166-GlnGlnGlyArgGlnPheArgGln-173

Hydrophilic Regions - Hopp-Woods

1-MetHisGlyArgAsnGlyGly-7
 92-LeuAspAspGluLeuAla-97
 136-AspValValAspAsp-140
 169-ArgGlnPheArgGln-173

a247-1**AMPHI Regions** - AMPHI

44-ValValSerSerCysSerLysIleAlaLysProGlyLysLysIleSerThrLeuGlnGlu-63
 153-PheAspSerSerThr-157

Antigenic Index - Jameson-Wolf

11-GluSerThrAspIleLysTyrProGly-19
 33-IleAspAspLeuAspAlaSerAla-40
 47-SerCysSerLysIleAlaLysProGlyLysLysIleSerThrLeuGlnGluAlaLysSer-66
 70-IleThrAsnAspAspLysGlnAsnGlyAsnIleThrArgGlnArgHis-85
 95-IleAlaGlyGluGluGlyLeu-101
 104-PheGlnLeuAspAspLysGlyLysTrpGlyAsn-114
 120-LysLysIleArgHisMetLys-126
 133-SerAspCysProGluAspAspAspAlaGlyLysGluGluLysPheLysTyrThrGlyThrPheAspSerSerThrAsnAla-159
 171-SerGlyThrAspThrLysIleAlaAlaSerSerAspAsnHis-184
 192-AlaThrIleArgGlyGlyAsnValCysAlaAsnArgThrLeu-205

Hydrophilic Regions - Hopp-Woods

11-GluSerThrAspIleLys-16
 33-IleAspAspLeuAspAlaSerAla-40
 49-SerLysIleAlaLysProGlyLysLysIleSerThr-60
 62-GlnGluAlaLysSer-66
 71-ThrAsnAspAspLysGlnAsnGlyAsnIleThrArgGlnArgHis-85
 95-IleAlaGlyGluGluGlyLeu-101
 105-GlnLeuAspAspLysGlyLysTrpGly-113
 120-LysLysIleArgHisMetLys-126
 134-AspCysProGluAspAspAlaGlyLysGluGluLysPheLysTyr-149
 153-PheAspSerSerThr-157
 172-GlyThrAspThrLysIleAlaAlaSerSerAsp-182

a248-1**AMPHI Regions** - AMPHI

88-GluAsnCysGlyLysGlyLeu-94
 121-ValGluAlaValLysArg-126
 148-ThrGlnSerValSerLysMetProArgTyrIleIleGlu-160
 168-GluAsnValTyrArgValThrAlaLysAlaTrpGlyLysAsn-181

Antigenic Index - Jameson-Wolf

1-MetArgLysGlnAsnThrLeuThr-8

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11-ProThrSerAspGlyGlnArgGly-18
 40-GlnSerTyrAsnThrGluGlnArgIleSerAlaAsnGluSerAspArgLysLeuAla-58
 64-AlaAlaLeuArgGluGlyGluLeuGln-72
 76-LeuGluTyrAspThrAspSerLysValThrPheSerGluAsnCysGlyLysGlyLeu-94
 99-AsnValArgThrAsnAsnAspAsnGluGluAlaPhe-110
 116-GlnGlyLysProThrValGluAlaValLysArgSerCysThrAlaLysSerThrGlyLeu-135
 137-IleAspAsnLysGlyMetGluTyrLysLysGlyThrGlnSerValSerLysMetProArgTyr-157
 162-LeuGlyValLysAsnGlyGluAsnValTyr-171
 177-AlaTrpGlyLysAsnAlaAsnThr-184
 192-ValSerAsnAsnAspGlu-197

Hydrophilic Regions - Hopp-Woods

1-MetArgLysGlnAsnThr-6
 11-ProThrSerAspGlyGlnArg-17
 42-TyrAsnThrGluGlnArgIleSerAlaAsnGluSerAspArgLysLeuAla-58
 64-AlaAlaLeuArgGluGlyGluLeuGln-72
 76-LeuGluTyrAspThrAspSerLysValThrPhe-86
 101-ArgThrAsnAsnAspAsnGluGluAlaPhe-110
 119-ProThrValGluAlaValLysArgSerCysThrAlaLysSer-132
 137-IleAspAsnLysGlyMetGluTyrLysLysGlyThrGlnSerValSerLysMetPro-155
 165-LysAsnGlyGluAsnValTyr-171
 193-SerAsnAsnAspGlu-197

a249-1**AMPHI Regions - AMPHI**

6-CysPheArgLeuLys-10
 15-GlyMetAlaLeuIleGluValLeuVal-23
 42-ThrValAlaSerValArgGluAla-49
 53-ThrIleValSerGlnIleThrGlnAsnLeuMetGluGlyMet-66

Antigenic Index - Jameson-Wolf

1-MetLysAsnAsnAspCysPheArgLeuLysAsnProGlnSerGly-15
 44-AlaSerValArgGluAlaGluThr-51
 70-ProThrIleAspSerAspSerAsnLysLysAsnTyr-81
 94-ValAspGlyAspPheGln-99
 102-AlaIleLysThrLysThrGlnLeuAla-110
 135-ValCysLysAspSerSerGlyValAla-143
 154-SerAsnCysAspGlySerAlaAsnGlyAspThrLeu-165
 173-AspSerAlaGlyAspSerAspIleAlaArgThrAsnLeuGluThrAsnGlyAsnAsn-191
 198-AlaArgValGlyGlyArgGlu-204

Hydrophilic Regions - Hopp-Woods

1-MetLysAsnAsnAspCysPheArgLeuLysAsnProGln-13
 44-AlaSerValArgGluAlaGluThr-51
 72-IleAspSerAspSerAsnLysLysAsn-80
 94-ValAspGlyAspPheGln-99
 102-AlaIleLysThrLysThrGlnLeuAla-110
 135-ValCysLysAspSerSerGly-141
 155-AsnCysAspGlySerAlaAsnGly-162
 174-SerAlaGlyAspSerAspIleAlaArgThrAsnLeuGluThrAsnGly-189
 200-ValGlyGlyArgGlu-204

a250**AMPHI Regions - AMPHI**

8-ArgAsnGluPheIleArgGlyIleLysGlu-17
 54-PheAlaGlyGlySerGlu-59
 61-AlaThrValAsnLeuTrpAlaGluPro-69

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Antigenic Index - Jameson-Wolf

5-SerSerProArgAsnGluPheIleArgGlyIleLysGluSerSer-19
 34-MetGlnGlyGlyGlnLysGlyMetSer-42
 54-PheAlaGlyGlySerGlu-59
 90-GlyXxxGlyThrCysProAlaProGluArgAsnThrAlaGluLysSerArgAlaArg-108

Hydrophilic Regions - Hopp-Woods

5-SerSerProArgAsnGluPheIleArgGlyIleLysGluSerSer-19
 95-ProAlaProGluArgAsnThrAlaGluLysSerArgAlaArg-108

a251**AMPHI Regions - AMPHI**

47-GlnAlaAlaAspLeuProArgAsnHisIleSerProAlaTyr-60
 81-ArgArgIleGlyAla-85
 110-GlnValValAlaAspPheGlyGlyIleGluGlyPhe-121
 156-ArgThrValGlyArgThrValArgLeuLeuLysMetIle-168
 211-AlaArgThrValPheArgAlaHis-218
 255-LeuGlyGlnGluCysArg-260
 262-ArgHisIleAlaArgValGluSerLeuLeuArgValPheGluTyrAlaAlaAsp-279

Antigenic Index - Jameson-Wolf

9-GlnProArgAlaAspIleArgProProAlaGlnThrAspIleValProAsnCys-26
 34-AspAlaAlaArgArgAlaValArg-41
 50-AspLeuProArgAsnHisIleSer-57
 74-GlyGlyPheArgGlyArgPheArgArg-82
 98-IleArgValLysAlaValLysThrGluIle-107
 145-ArgLeuValGlyThr-149
 157-ThrValGlyArgThrValArg-163
 175-ProValValArgGluAlaGly-181
 208-ValLysHisAlaArgThrValPhe-215
 251-IleLysAsnArgLeuGlyGlnGluCysArgAsnArgHisIleAlaArgValGluSer-269
 286-LysThrLysThrArgAlaGluGlnProArgSerAla-297

Hydrophilic Regions - Hopp-Woods

10-ProArgAlaAspIleArgProProAlaGln-19
 34-AspAlaAlaArgArgAlaValArg-41
 76-PheArgGlyArgPheArgArg-82
 98-IleArgValLysAlaValLysThrGluIle-107
 157-ThrValGlyArgThrValArg-163
 175-ProValValArgGluAlaGly-181
 208-ValLysHisAlaArgThrValPhe-215
 253-AsnArgLeuGlyGlnGluCysArgAsnArgHisIleAlaArgValGluSer-269
 287-ThrLysThrArgAlaGluGlnProArg-295

a254**AMPHI Regions - AMPHI**

6-ArgPheAsnThrTyrSerHis-12
 32-GlyHisGlyAspGlyTyrArg-38
 66-LysLeuLysSerIleLeuLys-72
 142-ValLeuAlaValMetLysSerLeuThrAlaSer-152

Antigenic Index - Jameson-Wolf

2-TyrThrGlyGluArgPheAsnThrTyrSer-11
 32-GlyHisGlyAspGlyTyrArg-38
 65-GlyLysLeuLysSerIleLeuLysLysThrAspHis-76
 94-SerLeuArgAsnGlyProGly-100

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120-ThrIleGlyArgLysSerGluLysArgLeuLeu-130
 177-AsnAspGluLysIleArgHisGlyHisGly-186

Hydrophilic Regions - Hopp-Woods

65-GlyLysLeuLysSerIleLeuLysLysThrAspHis-76
 120-ThrIleGlyArgLysSerGluLysArgLeuLeu-130
 177-AsnAspGluLysIleArgHis-183

a255**AMPHI Regions - AMPHI**

23-ValLysThrCysAlaAspPheHisAlaPheAspGlyValAspAlaHisHisGly-40
 71-GlyIleGlnGlyPheAlaHis-77
 139-AlaGlyGlyGlyPhe-143

Antigenic Index - Jameson-Wolf

40-GlyValGlyAspPheGly-45
 54-AlaGlnAlaAspGlyAspValGlyGly-62
 67-LeuArgAlaAspGlyIleGln-73
 91-ValGlyGlyLysLysArgIleLeu-98
 115-GlyAsnValGlyGlyAspPheArgAla-123
 130-PhePheGlyAsnGlySerGlyGlyAsnAlaGly-140
 145-GlyGlyThrProAla-149

Hydrophilic Regions - Hopp-Woods

56-AlaAspGlyAspVal-60
 67-LeuArgAlaAspGly-71
 92-GlyGlyLysLysArgIleLeu-98
 119-GlyAspPheArgAla-123

a256-1**AMPHI Regions - AMPHI**

90-GlyValValValHisPheArgSerCysGlyGlyValAla-102
 127-ArgTyrArgGluIleTyrAlaVal-134
 141-AsnAlaLeuAlaLysTyrLeuGlyGluGln-150
 174-ArgPheAspSerGlyIleThrArgLeuLeu-183
 197-ArgSerLeuGlnGlyPheGlnThrAla-205
 207-AlaAlaGlyCysLysThrLeuGlyGluPheAspAspArgPheThrAlaProLeuHisGly-226
 233-TyrTyrArgGlnThrSerCysLysProLeuLeuLysHisValAla-247
 267-ProArgAlaAspGluValSer-273

Antigenic Index - Jameson-Wolf

4-ThrProProAspThrProPhe-10
 12-LeuArgAsnGlyAsnAlaAspThrIleAla-21
 24-PheLeuGlnArgSerAlaProAlaTyrArgArgGluLeuLeuProAspSerThrGlyLysThrLysThrAlaTyrAspPheSerAspGlyIleSerProAspAla-58
 67-LeuGluGlyGlySerGlySer-73
 82-AlaValArgAspArgGlyTrpAsn-89
 97-SerCysGlyGlyValAlaAsn-103
 112-GlyAspThrAlaGlu-116
 124-LeuAlaAlaArgTyrArgGlu-130
 147-LeuGlyGluGlnGlyGluAsnAlaLeu-155
 166-ValAspAlaGluAlaAlaGlyAsnArgPheAspSerGlyIle-179
 192-LeuIleProLysAlaArgSerLeuGln-200
 212-ThrLeuGlyGluPheAspAspArgPheThr-221
 227-PheAlaAspArgHisAspTyrTyrArgGlnThrSerCysLysProLeuLeu-243
 259-ProPheLeuProProGluAlaLeuProArgAlaAspGluValSerGlu-274
 292-SerThrGlyGlyArgLeu-297

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311-AspSerPheArgThrAsnArgArg-318

Hydrophilic Regions - Hopp-Woods

28-SerAlaProAlaTyrArgArgGluLeuLeuPro-38
 40-SerThrGlyLysThrLysThr-46
 83-ValArgAspArgGlyTrp-88
 124-LeuAlaAlaArgTyrArgGlu-130
 147-LeuGlyGluGlnGlyGluAsnAlaLeu-155
 166-ValAspAlaGluAlaAlaGlyAsnArgPheAspSerGlyIle-179
 192-LeuIleProLysAlaArgSer-198
 212-ThrLeuGlyGluPheAspAspArgPheThr-221
 227-PheAlaAspArgHisAspTyrTyrArg-235
 265-AlaLeuProArgAlaAspGluValSerGlu-274
 313-PheArgThrAsnArgArg-318

a257**AMPHI Regions - AMPHI**

24-SerPheLeuProAsn-28
 73-AspLeuValAsnLysValLeuAlaGluValAlaArgLeuGluLysMetPhe-89
 109-SerProProAlaAspPheLeuGluLeuLeuSerLeuAlaValIlePheThr-125

Antigenic Index - Jameson-Wolf

1-MetGlyArgHisPheGlyArgArgArgPhe-10
 31-AlaAlaAspAspGluLysArgAsnLysAspGluLysArgAsnGluAsn-46
 56-GlySerGlyAlaGlu-60
 65-GlyValAspAspArgArgAlaAlaAspLeuVal-75
 83-AlaArgLeuGluLys-87
 92-TyrArgGluAspSerLeuIleSerArgLeuAsnArgAspGlyTyrLeuThrSerProProAlaAspPhe-114

Hydrophilic Regions - Hopp-Woods

4-HisPheGlyArgArgArgPhe-10
 31-AlaAlaAspAspGluLysArgAsnLysAspGluLysArgAsnGlu-45
 65-GlyValAspAspArgArgAlaAlaAspLeuVal-75
 83-AlaArgLeuGluLys-87
 92-TyrArgGluAspSerLeuIle-98
 100-ArgLeuAsnArgAspGlyTyr-106

a259-1**AMPHI Regions - AMPHI**

154-TyrGlyArgValPheAlaAspIlePheGluLeuSer-165
 172-AlaPheLysGlyMetLeuLysLeuThrAlaGluTyrLysAsnIlePheGlyAspAlaCysArg-192
 203-AsnGlnAlaLeuGlnGluIleSerLysThrSerGlu-214

Antigenic Index - Jameson-Wolf

34-LysAlaTyrThrGluGluLeuProPro-42
 61-SerAlaArgSerLysAlaLysAlaGluLysPheTyrArgGluLysMetIleGln-78
 93-LeuGluHisLysPro-97
 105-LysAsnHisGlyLysGlyMetAlaGluGlnValArgPheLysAla-119
 121-ValLeuProAspAspGluAspAlaArgThrIleAla-132
 144-GlyThrAspAlaValAlaSerGlyGluThrTyrGlyArgVal-157
 168-LeuGluGlyArgAlaPhe-173
 189-AspAlaCysArgSerGluThrAlaLeu-197
 208-GluIleSerLysThrSerGluLysSerLysArg-218

Hydrophilic Regions - Hopp-Woods

35-AlaTyrThrGluGluLeuPro-41
 62-AlaArgSerLysAlaLysAlaGluLysPheTyrArgGluLysMetIleGln-78

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93-LeuGluHisLysPro-97
 106-AsnHisGlyLysGlyMetAlaGluGlnValArgPheLysAla-119
 121-ValLeuProAspAspGluAspAlaArgThrIleAla-132
 168-LeuGluGlyArgAlaPhe-173
 189-AspAlaCysArgSerGluThrAlaLeu-197
 208-GluIleSerLysThrSerGluLysSerLysArg-218

a260**AMPHI Regions - AMPHI**

12-ProPheSerSerLeuPheArgAlaLeuPhe-21
 53-PheIleAspSerValGlyGlnValAlaAlaArgLeuPheGlnAlaPhe-68
 154-ValGlnIleAsnGlnValGlyIleValAspLeuIlePro-166
 176-AlaThrGlyCysThrGlyIleCysProLysCysProThrGlyCysArgPro-192

Antigenic Index - Jameson-Wolf

20-LeuPheGluAspArgValGlyIle-27
 30-GlyAlaHisAspAlaAlaGlu-36
 38-AspPheLeuProGluGluPheThrArg-46
 80-ProAlaPheArgAlaArgGluGlnAlaArgArgGlySerGly-93
 96-AlaGlyAsnAspLeuArgValProHisLysAspAlaValGluValAspIleAspGlyGlyAsnThrVal-118
 126-ThrHisPheAspAspGlyAspAla-133
 139-AlaGluAlaArgPhe-143
 184-ProLysCysProThrGlyCysArgProVal-193

Hydrophilic Regions - Hopp-Woods

20-LeuPheGluAspArgValGlyIle-27
 30-GlyAlaHisAspAlaAlaGlu-36
 82-PheArgAlaArgGluGlnAlaArgArgGlySer-92
 98-AsnAspLeuArgValProHisLysAspAlaValGluValAspIleAspGly-114
 127-HisPheAspAspGlyAspAla-133
 139-AlaGluAlaArgPhe-143
 186-CysProThrGlyCysArgProVal-193

a261**AMPHI Regions - AMPHI**

22-GlnIlePheArgGln-26
 32-AspThrAlaArgAlaPheAlaAlaAla-40
 50-GlyLeuLeuAlaAspIleVal-56
 92-ValHisGlyPheAspLysHis-98
 137-AlaValTyrLysGlyIleArgAsnAlaValPhe-147
 158-GlnGlyIleValArgAsnLeu-164
 203-AspValPheAlaProVal-208
 212-CysLeuAsnGlnAlaGlyGly-218

Antigenic Index - Jameson-Wolf

40-AlaAlaAspAspAlaVal-45
 60-HisPheValArgGlnArgProSerLeuArgLeu-70
 74-HisGlnArgArgValAspLeu-80
 86-ArgGlnIleLysGlyAsnValHisGlyPheAspLysHisVal-99
 111-AlaHisAlaArgAspAspValProTyr-119
 126-AsnArgGlyIleGluGlnGluLysArgVal-135
 149-SerPheAspGlyGlyGly-154
 181-ArgAsnProAlaGly-185
 197-LeuGluSerAsnGlyLeuAsp-203
 214-AsnGlnAlaGlyGlyArgIleLeuThrAlaArgLysAspAspGlnGlyPhe-230

Hydrophilic Regions - Hopp-Woods

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40-AlaAlaAspAspAlaVal-45
 60-HisPheValArgGlnArgProSerLeu-68
 74-HisGlnArgArgValAspLeu-80
 94-GlyPheAspLysHisVal-99
 112-HisAlaArgAspAspValPro-118
 127-ArgGlyIleGluGlnGluLysArgVal-135
 221-LeuThrAlaArgLysAspAspGlnGly-229

a263**AMPHI Regions - AMPHI**

32-AsnLeuIleGlyValLeuSerAsnAla-40
 42-GluAlaLeuAlaPheTyrGlnGluValGlyLysLeuAsnAlaAlaAsnSerLeuThr-60
 86-LysLeuAlaThrLeuLysLys-92
 100-LysAlaAlaArgAlaLeuAlaAlaGlyGlu-109
 115-LeuGlyAlaLeuAlaAlaPheThrGln-123
 135-GluGluLeuLysAlaPhePheAspAla-143
 157-ValAlaLeuAlaThrLeuCysAsnTyrValAsnAsnLeuGly-170

Antigenic Index - Jameson-Wolf

10-GluThrAlaProGluAlaAlaLysAlaArgValGluAla-22
 37-LeuSerAsnAlaPro-41
 72-AlaArgThrAsnGlnCysGly-78
 97-GlnSerValLysAlaAlaArg-103
 108-GlyGluPheAspAspAlaLysLeu-115
 126-MetAlaLysLysGlyAlaValSerAspGluGluLeuLysAla-139
 170-GlyGlnThrGluIleAsnProGluLeu-178

Hydrophilic Regions - Hopp-Woods

11-ThrAlaProGluAlaAlaLysAlaArgValGluAla-22
 97-GlnSerValLysAlaAlaArg-103
 108-GlyGluPheAspAspAlaLysLeu-115
 126-MetAlaLysLysGlyAlaValSerAspGluGluLeuLysAla-139

a264**AMPHI Regions - AMPHI**

55-ValAlaGluPheThrGlnThrGly-62
 96-IleProSerTyrValArgValThrAsnThrLys-106
 124-AsnArgIleIleAspValSer-130
 183-LeuAsnGlnAlaAlaGlnAsnLeuAlaSerSer-193

Antigenic Index - Jameson-Wolf

27-AlaValValArgAlaGluLysLeuHisAlaSerAlaAsnArgSerTyrLysValAlaGlyLysArgTyrThrProLysAsnGlnVal-55
 57-GluPheThrGlnThrGlyAsnAlaSerTrp-66
 68-GlyGlyArgPheHisGlyArgLysThrSerGlyGlyGluArgTyrAsp-83
 103-ThrAsnThrLysAsnGlyLysSerVal-111
 114-ArgValAsnAspArgGlyProPheHisGlyAsnArgIleIleAspValSerLysAlaAlaAla-134
 153-ValProGlyGlnSerAlaProValAlaGluAsnLysAspIlePheIle-168
 170-LeuLysSerPheGlyThrGluHisGluAla-179
 192-SerSerAlaSerAsnProAsnLeuSerValGluLysArgArgTyrGluTyr-208
 216-AlaSerGlnGluArgAlaAlaGluAlaGluAlaGlnAla-228

Hydrophilic Regions - Hopp-Woods

27-AlaValValArgAlaGluLysLeuHisAlaSerAlaAsnArgSerTyrLysValAlaGlyLysArgTyrThrPro-51
 71-PheHisGlyArgLysThrSerGlyGlyGluArgTyrAsp-83
 103-ThrAsnThrLysAsnGlyLys-109

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115-ValAsnAspArgGlyProPheHis-122
 125-ArgIleIleAspValSerLysAlaAlaAla-134
 159-ProValAlaGluAsnLysAspIlePheIle-168
 171-LysSerPheGlyThrGluHisGluAla-179
 199-LeuSerValGluLysArgArgTyrGluTyr-208
 216-AlaSerGlnGluArgAlaAlaGluAlaGluAlaGlnAla-228

a266**Antigenic Index** - Jameson-Wolf

5-AsnAlaPheArgArgHisArgArgGlnCysProAsnArgLysProAlaMet-22
 51-ProLeuLysArgLysHisPhe-57
 80-SerArgAlaGlyAlaValHisAspGlnGlyTrpGlu-91
 114-TrpHisThrArgAsnArgGlu-120

Hydrophilic Regions - Hopp-Woods

5-AsnAlaPheArgArgHisArgArgGlnCysProAsnArgLysProAlaMet-22
 51-ProLeuLysArgLysHisPhe-57
 80-SerArgAlaGlyAlaValHis-86

a268-1**AMPHI Regions** - AMPHI

6-AspGlyLeuHisLysPheLysHisIleCysSerAlaAla-18
 22-IleLysGluProLeuAspLys-28
 52-GlnGluValAspArgValSerGluTrp-60
 70-GluPheGluGlnPheTrpLysGlyLeuProGlnThrValGlnAsn-84
 89-SerGlnLysThrTrpLysSerGlyMetAspLys-99
 110-GluThrProAsnGlyIleLys-116

Antigenic Index - Jameson-Wolf

1-ValGlnSerArgTyrAspGly-7
 21-LeuIleLysGluProLeuAspLysAlaLysGlnArgAsnGluGluLeuGluAlaAlaGluGluAlaAlaAla-44
 47-AlaLeuGlyArgGluGlnGluValAspArgValSerGluTrpGluGluArgTyrLysLeuSerArgSerGluPhe-71
 82-ValGlnAsnLysLeuGlnAlaSerGlnLysThrTrpLysSerGlyMetAspLysIleCysAlaAsnAsnAlaLysAlaGluGlyGluThrProAsnGly-114
 119-GluLeuAlaCysLysThrAlaGluThrGluAlaArgLeuGluGluLeuHisAsnArgLysLysAlaLeuLeuAspGluMetAlaArgGluAlaAspLysLysGluLeuProLysArgLeu-158

Hydrophilic Regions - Hopp-Woods

3-SerArgTyrAspGly-7
 21-LeuIleLysGluProLeuAspLysAlaLysGlnArgAsnGluGluLeuGluAlaAlaGluGluAlaAlaAla-44
 47-AlaLeuGlyArgGluGlnGluValAspArgValSerGluTrpGluGluArgTyrLysLeuSerArgSerGluPhe-71
 91-LysThrTrpLysSerGlyMetAspLysIleCys-101
 104-AsnAlaLysAlaGluGlyGluThrProAsn-113
 119-GluLeuAlaCysLysThrAlaGluThrGluAlaArgLeuGluGluLeuHisAsnArgLysLysAlaLeuLeuAspGluMetAlaArgGluAlaAspLysLysGluLeuProLysArgLeu-158

a269**AMPHI Regions** - AMPHI

54-TrpAspPheIleGlnAsnThr-60
 73-PheLysThrArgAlaLeuGlyArgPheSerSerPro-84

Antigenic Index - Jameson-Wolf

42-ProAlaSerSerAla-46
 60-ThrAlaSerProLysValSer-66

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73-PheLysThrArgAlaLeuGlyArgPheSerSerPro-84
90-LeuSerGlyArgGlyValLysLysProLeu-99
107-GlnValAspThrSerAla-112

Hydrophilic Regions - Hopp-Woods

61-AlaSerProLysVal-65
73-PheLysThrArgAlaLeuGly-79
93-ArgGlyValLysLysProLeu-99

a270**AMPHI Regions - AMPHI**

41-AspLeuThrGluGlyCys-46
49-ProAspGlySerArg-53
100-GlnProSerGlyThrTrp-105

Antigenic Index - Jameson-Wolf

1-MetAsnLysAsnArgLysLeu-7
41-AspLeuThrGluGlyCysThrLeuProAspGlySerArgValArgAlaAlaAlaValSerThrLysLysProPhe-65
71-HisAlaProAlaGlyThrGlu-77
86-LysAsnMetAspMetGlyPhe-92
95-TyrMetPhGluArgGlnProSerGlyThr-104
116-ValGluGlyArgArgAspPheThrAla-124
128-IleGlySerArgThrPhe-133

Hydrophilic Regions - Hopp-Woods

1-MetAsnLysAsnArgLysLeu-7
49-ProAspGlySerArgValArgAla-56
60-SerThrLysLysProPhe-65
73-ProAlaGlyThrGlu-77
96-MetPheGluArgGlnPro-101
116-ValGluGlyArgArgAspPheThrAla-124

a271-2**AMPHI Regions - AMPHI**

6-MetAlaArgIleTrp-10
20-SerProCysProAla-24
29-ProLysSerLeuAlaLysCysAla-36

Antigenic Index - Jameson-Wolf

26-ThrThrLysProLysSerLeuAlaLys-34
41-ArgSerAsnCysLeu-45
60-CysSerSerThrThrGlyAlaProThrSerArg-70
78-SerAlaSerIleAsnLysAspThrArgMetProAlaSerVal-91
102-CysCysAlaAsnThrSerLysProProSer-111

Hydrophilic Regions - Hopp-Woods

27-ThrLysProLysSerLeuAla-33
80-SerIleAsnLysAspThrArgMet-87
105-AsnThrSerLysProPro-110

a272-2**AMPHI Regions - AMPHI**

44-IleThrArgIleThrAspGlu-50
70-AlaGluGluPheSerSerThrAsn-77
106-PheArgAlaIleThrSer-111
165-IleIleThrIleGluAspProIleGlu-173

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194-AsnTrpMetAlaAlaLeuLysAsnThrLeuArgGlnAla-206
 244-AsnGlnAlaLeuAspArgIleIleAsn-252
 307-GlyAsnIleHisGluIleLysGluValMetLys-317
 328-AspGlnHisLeuTyrGln-333
 343-GlnAspAlaLeuLysAsnAlaAspSer-351

Antigenic Index - Jameson-Wolf

2-PheThrAspGluAsnMetThrAlaLysGluGluLeu-13
 19-HisMetAsnLysAsnLysGlySerAsp-27
 38-MetLysLeuAspGlyLysIleThrArgIleThrAspGluProLeuThrAlaGluLysCysMet-58
 68-LysGlnAlaGluGluPheSerSerThrAsnGlu-78
 85-LeuProAspThrSerArgPheArgVal-93
 109-IleThrSerLysIleProLysPheGluSerLeuAsn-120
 128-ValAlaLeuLysLysArgGly-134
 142-ThrGlySerGlyLysSerThrSerLeu-150
 154-IleAspTyrArgAsnGluAsnSerPheGly-163
 168-IleGluAspProIle-172
 176-HisGluHisLysAsnCys-181
 184-ThrGlnArgGluValGlyValAspThrGluAsn-194
 199-LeuLysAsnThrLeuArgGlnAlaProAsp-208
 214-GluIleArgAspArgGluThrMet-221
 241-AsnSerThrAsnGlnAlaLeuAspArg-249
 254-PheProGluGluArgArgGluGlnLeuLeu-263
 278-LeuValProArgAspGlyGlyLysGlyArgValAlaAla-290
 310-HisGluIleLysGluValMetLysLysSerThr-320
 336-GluLysGlyGluIleSerLeu-342
 344-AspAlaLeuLysAsnAlaAspSerAlaHisAspLeu-355
 361-LeuArgSerArgGlnAlaGlnSerSerGlyProAspLeuGluLeuLeu-376

Hydrophilic Regions - Hopp-Woods

2-PheThrAspGluAsnMetThrAlaLysGluGluLeu-13
 20-MetAsnLysAsnLysGlySerAsp-27
 38-MetLysLeuAspGlyLysIleThrArgIleThrAspGluProLeuThrAlaGluLysCysMet-58
 68-LysGlnAlaGluGluPheSerSer-75
 87-AspThrSerArgPheArgVal-93
 112-LysIleProLysPheGluSer-118
 128-ValAlaLeuLysLysArgGly-134
 143-GlySerGlyLysSerThrSer-149
 155-AspTyrArgAsnGluAsnSer-161
 168-IleGluAspProIle-172
 176-HisGluHisLysAsn-180
 184-ThrGlnArgGluValGlyValAspThr-192
 201-AsnThrLeuArgGlnAlaPro-207
 214-GluIleArgAspArgGluThrMet-221
 245-GlnAlaLeuAspArg-249
 255-ProGluGluArgArgGluGlnLeuLeu-263
 278-LeuValProArgAspGlyGlyLysGlyArgValAlaAla-290
 310-HisGluIleLysGluValMetLysLysSerThr-320
 336-GluLysGlyGluIleSerLeu-342
 344-AspAlaLeuLysAsnAlaAspSerAlaHisAspLeu-355
 361-LeuArgSerArgGlnAlaGlnSerSerGlyProAspLeuGluLeu-375

a274**AMPHI Regions - AMPHI**

31-TyrLysAspGlyLys-35
 111-GluAlaValPheLysThrLeuSerPro-119

Antigenic Index - Jameson-Wolf

25-LeuValThrAspAspTyrTyrLysAspGlyLysHisIleAsp-38
 40-GlnLeuHisArgAspGluGluAlaValArgArgHisIle-52
 60-ProAspMetAsnAla-64
 71-GlyGluPheAspGlyLysGlnPro-78
 85-HisProThrArgLysAlaAspAspGlnThrVal-95
 99-ProValGlySerAlaGlnAsnGlyArgAlaGluTyr-110
 117-LeuSerProThrAsnHis-122
 126-ArgValGluAspAlaAlaGly-132
 136-ValGluAsnLysTrpIleThrSerGlnGlyAsnAlaValAspLeuThrProMetAspLysLeuPheAsnAsn
 ThrGluSerLys-163

Hydrophilic Regions - Hopp-Woods

29-AspTyrTyrLysAspGlyLysHisIleAsp-38
 40-GlnLeuHisArgAspGluGluAlaValArgArgHisIle-52
 72-GluPheAspGlyLysGln-77
 86-ProThrArgLysAlaAspAspGlnThrVal-95
 104-GlnAsnGlyArgAlaGluTyr-110
 126-ArgValGluAspAlaAlaGly-132
 151-ThrProMetAspLysLeuPheAsn-158

a276**AMPHI Regions - AMPHI**

9-MetMetArgSerAlaProSerMetValValArgArgTrpAlaThrMetMet-25
 60-SerPheLysMetAlaArg-65
 80-ProPheAspProMetGlyTrp-86
 115-GlyArgLeuTyrArgThrPheSerAsn-123
 164-ThrLysArgGlySerArgLeu-170
 207-SerThrSerThrLeuArgLysLeuMetArgProSerThr-219

Antigenic Index - Jameson-Wolf

10-MetArgSerAlaProSerMetVal-17
 29-PheSerIleArgArgSerSerAlaCysTrpThrArgArgSerAspSerLeuSer-46
 52-SerSerAsnAsnAsnIle-57
 67-MetAlaThrArgCysArgCysProProAspLysLeuLeuPro-80
 82-AspProMetGlyTrp-86
 88-SerProSerGlyAspAlaSerIleArg-96
 103-TrpArgAlaAspArgThrSerAlaSerProAlaSerGlyArgLeuTyr-118
 121-PheSerAsnArgValSerSerAsnArgAsnThrSerTrpGluThrArgAlaAsnTrpAlaArgArgGlnSer
 SerLeu-146
 158-LeuProAlaAspGlySerThrLysArgGlySerArgLeuThrThr-172
 176-ProLeuProGluArgProThrArgAlaThrArgSerProCysLeuMetSerArgLeuLysProSerArgAla
 LeuMetProSerGluArgTyrSerThrSerThrLeuArgLysLeuMetArgProSerThrArgCysGlyAla-223
 229-CysSerGlyGlyValSerArgAsnAlaHisThrProSerAlaAlaArgAsn-245

Hydrophilic Regions - Hopp-Woods

29-PheSerIleArgArgSerSer-35
 38-TrpThrArgArgSerAspSerLeu-45
 67-MetAlaThrArgCysArgCysProProAspLys-77
 90-SerGlyAspAlaSerIleArg-96
 104-ArgAlaAspArgThrSerAla-110
 124-ArgValSerSerAsnArgAsnThrSerTrpGluThr-135
 137-AlaAsnTrpAlaArgArgGlnSerSer-145
 161-AspGlySerThrLysArgGlySerArg-169
 176-ProLeuProGluArgProThrArgAlaThrArg-186

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192-SerArgLeuLysProSerArg-198
 200-LeuMetProSerGluArgTyrSer-207
 210-ThrLeuArgLysLeuMetArgProSerThrArgCys-221
 232-GlyValSerArgAsnAlaHis-238

a277**AMPHI Regions** - AMPHI

43-PheGluValValGlyGlyLeuPheAspPheValLeu-54
 70-CysProAsnGluValIleAspValPheHisAlaLeuGln-82
 87-AlaPheAspAlaValGlyAspPheAlaGluTyrGlyGlyAlaValAspAlaAlaAspLeuLeuGluIleGlyGluLeuGlyTyrPheHis-116
 180-AlaValGlyValValAlaValAla-187

Antigenic Index - Jameson-Wolf

2-ProArgPheGluAspLysLeuValGlyArgGlnGlyGluGlyGlyVal-17
 69-PheCysProAsnGluVal-74
 95-AlaGluTyrGlyGly-99
 118-ValGluProAspPheProAlaGlnThrProArgAlaGluGlyGly-132
 138-PheAspLysAlaAsp-142
 162-AspIleGlyGlySerGlyLeuGluGlyAspLeu-172
 196-LeuAspValGlyGlyLysProArgLeuGlyAla-206
 208-CysAlaGlnThrGlyGlyGlyMetGly-216
 219-GlyThrAspPheHis-223
 226-GlyLeuAspAspGlyAla-231
 239-LeuGlnPheGluAspAspLeuLeuGluGlyLysHisGlyLeu-252

Hydrophilic Regions - Hopp-Woods

2-ProArgPheGluAspLysLeuValGlyArgGlnGlyGlu-14
 118-ValGluProAspPhe-122
 126-ThrProArgAlaGluGly-131
 138-PheAspLysAlaAsp-142
 167-GlyLeuGluGlyAspLeu-172
 198-ValGlyGlyLysProArgLeuGlyAla-206
 226-GlyLeuAspAspGlyAla-231
 239-LeuGlnPheGluAspAspLeuLeuGluGlyLysHisGlyLeu-252

a278**AMPHI Regions** - AMPHI

7-GlyAlaIlePheSerIleGly-13
 20-IleGlyProLeuProSerIleGlyArg-28
 42-ThrGlyThrSerLys-46
 101-ArgThrIleProSerValThrGluIle-109
 123-PheSerIleLeuAlaLeuIleLysSerLeuIleSer-134
 157-LeuTyrArgGlnIleGlnAsnLeuIleThrHisPheAsnPheTyrAlaAla-173
 189-GluThrLeuIleGlnHisLeuArgGlnLeuAlaAsp-200

Antigenic Index - Jameson-Wolf

25-SerIleGlyArgProAsnAlaSerThrThrArgProThrSerSerArgProThrGlyThrSerLysIleArgPro-49
 63-SerProAsnThrThrAlaProThrGluSerArgSerArgPheIleAla-78
 80-ProLysValLeuProGlyAsnSerSerIle-89
 93-IleAlaSerAspLysProTrpMetArg-101
 110-ThrValProArgValArgThrSerAlaPheThrAspArgPheSer-124
 146-ArgHisSerArgValGlnGlyThr-153
 178-PheAspPheAspArgAspPhe-184
 209-ThrValAsnAspGlyArgPheAspMetValGlu-219

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Hydrophilic Regions - Hopp-Woods

27-GlyArgProAsnAlaSerThrThrArgProThrSerSerArgProThrGlyThrSerLysIleArgPro-49
 68-AlaProThrGluSerArgSerArgPheIleAla-78
 93-IleAlaSerAspLysProTrp-99
 110-ThrValProArgValArgThr-116
 146-ArgHisSerArgValGln-151
 178-PheAspPheAspArgAspPhe-184
 211-AsnAspGlyArgPheAspMetValGlu-219

a279**AMPHI Regions - AMPHI**

6-GlyCysLeuIleSer-10
 47-AlaAlaSerIleAlaArgSerThrAla-55
 58-LeuProAlaIleThrThr-63
 74-ThrThrSerSerCysAlaAsp-80

Antigenic Index - Jameson-Wolf

13-XxxArgAlaSerAla-17
 29-TrpGluGlyThrAspThrGlySerGlyArgAlaArgLeuAla-42
 64-CysProGlyGluLeuLysLeuThr-71
 74-ThrThrSerSerCysAlaAspSer-81
 88-CysSerSerSerLysProArgIle-95
 101-ThrProCysGlyThrAlaAspCysIleSerSerAlaArgXxxArgThrSerLeu-118
 120-AlaSerAlaLysSerAsnAlaProAla-128
 148-ProProAlaSerGlu-152

Hydrophilic Regions - Hopp-Woods

13-XxxArgAlaSerAla-17
 29-TrpGluGlyThrAspThrGlySerGlyArgAlaArgLeuAla-42
 66-GlyGluLeuLysLeu-70
 89-SerSerSerLysProArgIle-95
 110-SerSerAlaArgXxxArgThrSerLeu-118
 120-AlaSerAlaLysSerAsnAla-126

a280**AMPHI Regions - AMPHI**

27-SerPheSerIleLeuGlyAspValAlaLys-36
 64-AspIleLysLysIleArgSerAla-71
 85-AspIleGlnArgAlaValLys-91
 97-TyrAlaGluAlaThrLysGlyIleGlnProLeuLys-108
 150-AlaTyrAlaGlnAsnValAlaGluAlaLeuIleLys-161
 237-ValAlaAlaIleIleArgGlnIleLys-245
 247-GluGlyIleLysAlaValPheThrGlu-255
 258-LysAspThrArgMetValAspArgIleAlaLysGluThr-270
 278-LeuTyrSerAspAlaLeuGlyAsnAlaProAlaAspThrTyrIle-292

Antigenic Index - Jameson-Wolf

1-MetLysHisProLys-5
 38-IleGlyGlyGluArgValSer-44
 51-AlaAsnGlnAspThrHis-56
 61-ThrSerGlyAspIleLysLysIleArgSerAlaLys-72
 82-GluAlaAlaAspIleGlnArgAlaValLysGlnSerLysValSerTyrAlaGluAlaThrLysGlyIleGln-105
 107-LeuLysAlaGluGluGluGlyGlyHisHisHisAspHisAspHisAspHisAspHisGluGlyHisHisHisAspHisGlyGluTyrAspProHisValTrpAsnAspPro-145
 159-LeuIleLysAlaAspProGluGlyLysValTyrTyr-170
 180-GlnLeuLysLysLeuHisSerAspAla-188

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196-ProAlaAlaLysArgLysValLeuThr-204
 212-MetGlyLysArgTyrHis-217
 222-AlaProGlnGlyValSerSerGluAlaGluProSerAlaLysGln-236
 242-ArgGlnIleLysArgGluGlyIle-249
 255-GluAsnIleLysAspThrArgMetValAspArgIleAlaLysGluThrGlyVal-272
 274-ValSerGlyLysLeuTyrSer-280
 286-AlaProAlaAspThr-290
 295-TyrArgHisAsnIle-299

Hydrophilic Regions - Hopp-Woods

1-MetLysHisProLys-5
 38-IleGlyGlyGluArgValSer-44
 63-GlyAspIleLysLysIleArgSerAlaLys-72
 82-GluAlaAlaAspIleGlnArgAlaValLysGlnSerLys-94
 99-GluAlaThrLysGly-103
 107-LeuLysAlaGluGluGluGlyGlyHisHisHisAspHisAspHisAspHisAspHisAspHisGluGlyHis
 HisHisAspHisGlyGluTyrAsp-138
 159-LeuIleLysAlaAspProGluGly-166
 180-GlnLeuLysLysLeuHisSerAspAla-188
 196-ProAlaAlaLysArgLysValLeuThr-204
 226-ValSerSerGluAlaGluProSerAlaLysGln-236
 242-ArgGlnIleLysArgGluGlyIle-249
 255-GluAsnIleLysAspThrArgMetValAspArgIleAlaLysGluThrGlyVal-272

a281**AMPHI Regions - AMPHI**

62-AlaAlaGlyMetLeuMetAlaLeuLeuAlaGlyLeuValSerArgPhe-77
 126-LeuGlnLeuIleAlaAlaValSerThrLeuThr-136
 140-LeuAlaValIleTyrArg-145
 179-LeuValSerGlyPheGlnAlaLeuGlyThrLeuMetSerVal-192
 205-TrpAlaLysHisMet-209
 216-SerValLeuThrAlaLeuLeuCysGly-224

Antigenic Index - Jameson-Wolf

25-ArgArgMetSerLeu-29
 78-ThrThrLeuLysGluAspAlaAsn-85
 102-SerLysAsnGlySerSerVal-108
 159-SerValGlyGlyLysGlyGly-165
 236-IleProSerGlyPro-240
 256-LeuGlyLysGluGlyGlyIle-262
 266-TrpLeuLysAsnHisArgHisHisThrThr-275

Hydrophilic Regions - Hopp-Woods

25-ArgArgMetSerLeu-29
 78-ThrThrLeuLysGluAspAlaAsn-85
 103-LysAsnGlySerSer-107
 256-LeuGlyLysGluGlyGlyIle-262
 267-LeuLysAsnHisArgHisHisThr-274

a282**AMPHI Regions - AMPHI**

10-LeuIleValAlaPheLeuValLeuIleAsnPropheSerAlaLeu-24
 50-ValPheAlaValIleAlaValPheAlaLeuIleGlyGlyThrLeu-64
 111-ValArgProAlaArgAsn-116
 176-ValSerArgLeuLeu-180
 186-ThrIleLeuAsnArgIleMetGlyMet-194

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Antigenic Index - Jameson-Wolf

31-ThrAsnGlyHisSerThrLysGluArgArgLysValAlaArg-44
 92-AsnGlyAsnAspAsnProAlaLysGlnAsnLeuGlyAlaGlnProGluThrGlyGlnValArgProAlaArgAsnAlaGlyAla-119

Hydrophilic Regions - Hopp-Woods

34-HisSerThrLysGluArgArgLysValAlaArg-44
 92-AsnGlyAsnAspAsnProAlaLysGlnAsnLeu-102
 104-AlaGlnProGluThrGlyGlnValArgProAlaArgAsn-116

a283**AMPHI Regions** - AMPHI

11-ThrLeuAlaSerPheLeuPro-17
 32-GlyGlyAsnSerTyrSerAspValProLysGlnLeuHis-44
 67-AlaAspAlaGlyLysArgThr-73

Antigenic Index - Jameson-Wolf

28-TrpLysAspGlyGlyGlyAsnSerTyrSerAspValProLysGlnLeuHisProAspGlnSerGln-49
 53-LeuArgThrArgGlnThrLysProAlaValLysProAlaGlnAlaAspAlaGlyLysArgThrAspGlyAlaAlaGlnGluAsnAsnProAspThrAlaGluLysAsnArgGlnLeuGluGluGluLysLysArgIleAlaGluThrGluArgGlnAsnLysGluGluAsnCysArgIleSerLysMetAsnLeu-117
 121-GlyAsnSerAsnAlaLysAsnLysAspAspLeuIleArgLysTyrAsnAsnAlaValAsnLysTyrCysArg-144

Hydrophilic Regions - Hopp-Woods

35-SerTyrSerAspValProLys-41
 43-LeuHisProAspGlnSerGln-49
 53-LeuArgThrArgGlnThrLysProAlaValLysProAlaGlnAlaAspAlaGlyLysArgThrAspGlyAlaAlaGlnGluAsnAsnProAspThrAlaGluLysAsnArgGlnLeuGluGluGluLysLysArgIleAlaGluThrGluArgGlnAsnLysGluGluAsnCysArgIleSerLysMetAsnLeu-117
 123-SerAsnAlaLysAsnLysAspAspLeuIleArgLysTyrAsn-136

a284**AMPHI Regions** - AMPHI

43-GluAlaPheAlaGlyPhePheGluThrVal-52
 61-ThrPheAlaAlaArgPhe-66
 125-ValAspPheAspValPhe-130
 154-ValValPheArgLeuPheArgGlnValValValAsp-165
 174-AspThrAlaCysGlyAsnValGlyGly-182
 187-AlaAlaAlaPheAlaGlnIleHisGln-195
 216-PheValGlnPheIleArgAspAspPheGlyHisGly-227
 277-PheArgValPheGlyGlnPheAlaArgGlnPheAla-288
 304-PheArgArgGlyPheAspAspGlyPheAspValValAspLys-317
 340-AlaAlaLeuHisGlnValHisGlnThrAla-349
 352-GlyAspAsnGlnIleAspArgPheAlaGln-361
 407-AlaArgAlaPheAlaArgPhePheAlaAlaPheGlyGlnSerLeuGlnSer-423

Antigenic Index - Jameson-Wolf

1-MetProSerGluThrArgAsnArgPhe-9
 109-PheAspGlyGlnPhe-113
 132-HisPheGlyLysArgAsnArgAsnThrArgAla-142
 147-GlyAlaProAspAlaVal-152
 166-AsnValGlyAsnGlyArgTyrValAspThrAlaCysGlyAsnValGlyGlyAsnGlnAsn-185
 209-AlaValGlyGlyGlu-213
 219-PheIleArgAspAspPheGlyHisGlyPheGlyGlyArgGluAsnHisAla-235
 273-AspPheAspAspPheArg-278

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286-GlnPheAlaAspArgAlaValProSerGlyGlyGluGlnGlnSer-300
 303-ValPheArgArgGlyPheAspAspGlyPheAspValValAspLysAlaHis-319
 347-GlnThrAlaArgArgGlyAspAsnGlnIleAspArgPheAla-360
 362-GlyAlaGlyLeuValAlaGluArgCysThrThrAspAspAlaAspGlyThrGluProThr-381
 398-PheAlaGlyArgArgGlnHisGlnArgAlaArgAla-409
 419-GlnSerLeuGlnSerArg-424

Hydrophilic Regions - Hopp-Woods

1-MetProSerGluThrArgAsnArgPhe-9
 134-GlyLysArgAsnArgAsnThrArgAla-142
 220-IleArgAspAspPheGly-225
 229-GlyGlyArgGluAsnHisAla-235
 286-GlnPheAlaAspArgAlaValProSerGlyGlyGluGlnGln-299
 306-ArgGlyPheAspAspGlyPheAspValValAspLysAlaHis-319
 347-GlnThrAlaArgArgGlyAspAsnGlnIleAspArgPheAla-360
 366-ValAlaGluArgCysThrThrAspAspAlaAspGlyThrGlu-379
 398-PheAlaGlyArgArgGlnHisGlnArgAlaArgAla-409

a285-1**AMPHI Regions - AMPHI**

15-ValCysPheLeuGly-19
 34-GlnIleProSerTrp-38
 50-GlyThrLeuLeuAspGlyPheAsp-57
 116-SerLeuProAspSerIleAspLeuPro-124
 208-HisSerThrAlaArg-212
 240-HisProPheAlaGluSerLeuAspLysThrLeuGluGluValLeu-254
 266-ValProSerLeuPro-270
 280-AlaIleProSerPheSerAsp-286
 313-GlnValLeuGlySer-317
 592-IleGlyLysAlaAlaAspIle-598
 609-ProAspThrSerArg-613
 629-GlyAlaGluValValAsp-634
 671-GlyIleAsnArgGluLeuThrArgTrp-679
 747-IleAlaGluLeuHisAsnPhePheLysProProPhe-758
 776-AlaArgGlyTyrLeu-780
 836-PheGlyGlyAsnMetAlaAsn-842
 848-ArgIleThrAlaSerLeuProAspLeuGlyThrLeu-859
 868-GlnAsnIleThrGlySerLeuAsnAlaAla-877
 955-GlySerIleAlaAsp-959
 1008-ThrAlaGluLeuSer-1012
 1061-ValThrGlyMetIleLys-1066
 1135-SerGlyGlySerValArgGlyValGlyThrValArg-1146
 1165-ThrValSerPheValGlyProLeuAsn-1173
 1190-AlaGlyValGluIleLeuGlySerLeuAsn-1199
 1244-LeuAlaGlyGlnIle-1248
 1305-ValLysLeuIleTyrArgLeuThrArgAlaIleGlnAlaValAlaArgIleGlySer-1323

Antigenic Index - Jameson-Wolf

43-IleSerSerGlnAsnLeuLysGlyThrLeuLeuAspGlyPheAspGlyAspAsnTrpSerIleGluThrGluGlyAlaAspLeuLysIleSerArg-74
 80-LysProSerGluLeuMetArgArgSerLeuHis-90
 104-LysProThrProProLysGluGluArgProProLeuSerLeuProAspSerIleAsp-122
 130-AspArgPheGluThrGlyLysIleSerMetGlyLysAlaPheAspLysGlnThrValTyr-149

151-GluArgLeuAspAlaSerTyrArgTyrAspArgLysGlyHisArgLeuAspLeuLysAlaAlaAspThrPro
TrpSerSerSerSerGlySerAla-182
185-GlyLeuLysLysProPheAla-191
198-ThrLysGlyGlyLeuGluGlyLysThrIle-207
209-SerThrAlaArgLeuSerGlySerLeuLysAspValArgAla-222
224-LeuAlaIleAspGlyGlyAsnIleArgLeuSerGlyLysSer-237
244-GluSerLeuAspLysThrLeuGlu-251
268-SerLeuProAspAla-272
292-GlySerLeuAspLeuGluAsnThrLys-300
302-GlyPheAlaAspArgAsnGlyIleProVal-311
320-IleArgGlnAspGlyThrValHis-327
337-GlyArgGlyGlyIleArgLeuSerGlyLysIleAspThrGluLysAspIleLeu-354
362-SerValGlyAlaGluAspValLeu-369
372-AlaPheLysGlyArgLeuAspGlySerIle-381
387-ThrAlaSerProLysIle-392
400-ThrAlaArgThrAspGlySerLeu-407
411-SerAspProAlaAsnGlyGlnArgLysLeuVal-421
430-GlyGlnGlySerLeuThr-435
442-LeuPheLysAspArgLeuLeuLysLeuAspIleArgSerArgAlaPheAspProSerArgIleAspProGln
Leu-466
480-GluLeuAlaLysGluLysPheThrGlyLys-489
508-IleValTyrGluSerArgHisLeuProArgAlaAlaVal-520
522-LeuArgLeuGlyArgAsnIleIleLysThrAspGlyGlyPheGlyLysLysGlyAspArgLeuAsn-543
548-AlaProAspLeuSerArgPheGly-555
563-AsnValArgGlyHisLeuSerGlyAspLeuAspGlyGlyIleArgThrPheGluThrAspLeuSerGlyAla
Ala-587
594-LysAlaAlaAspIleArgSer-600
605-LeuLysGlySerProAspThrSerArgProIleArgAlaAspIleLysGlySerArgLeuSerLeuSerGly
GlyAlaGluValValAspThrAlaAspLeuMetLeuAspGlyThrGlyVal-645
647-HisArgIleArgThr-651
656-ThrLeuAspGlyLysProPheLysPheAspLeuAspAlaSerGlyGlyIleAsnArgGluLeuThrArgTrp
LysGlySerIle-683
696-LeuGlnAsnArgMetThrLeu-702
704-AlaGlyAlaGluArgValAla-710
729-SerTrpAspLysLysThrGlyIleSerAlaLysGlyGlyAla-742
764-LeuAsnGlyAspTrp-768
772-TyrGlyArgAsnAlaArgGly-778
782-IleSerArgGlnSerGlyAspAlaValLeu-791
803-SerLeuLysThrArgPheGlnAsnAspArgIleGly-814
817-LeuAspGlyGlyAlaArgPheGlyArgIleAsnAlaAspLeuAspIle-832
844-ProLeuGlyGlyArgIleThr-850
882-GlyArgValGlySerProSerVal-889
893-ValAsnGlySerSerAsnTyrGlyLysIleAsnGly-904
908-ValGlyGlnSerArgSerPheAspThrAlaProLeuGlyGlyArgLeuAsn-924
941-GlnThrValLysGlySerLeu-947
956-SerIleAlaAspProHisLeuGlyGly-964
966-IleAsnGlyAspLysLeuTyrTyrArgAsnGlnThr-977
982-LeuAspAsnGlySerLeuArg-988
991-IleAlaGlyArgLysTrpVal-997
1001-LeuLysPheArgHisGluGlyThrAlaGluLeuSerGly-1013
1015-ValGlyMetGluAsnSerGlyProAspValAspIle-1026
1031-AspLysTyrArgIleLeuSerArgProAsnArgArgLeuThr-1044
1047-GlyAsnThrArgLeuArgTyrSerProGlnLysGlyIle-1059
1065-IleLysThrAspGlnGlyLeuPheGlySerGlnLysSerSerMetProSerValGlyAspAspVal-1086
1091-GluValLysLysGluAlaAla-1097

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1109-AspLeuAsnAspGlyIleArg-1115
1134-GlnSerGlyGlySerValArgGlyValGly-1143
1146-ArgValIleLysGlyArgTyrLysAlaTyrGlyGlnAspLeuAspIleThrLysGlyThr-1165
1171-ProLeuAsnAspProAsnLeuAsnIleArgAlaGluArgArgLeuSerProValGly-1189
1197-SerLeuAsnSerProArgIle-1203
1207-AlaAsnGluProMetSerGluLysAspLysLeu-1217
1225-AlaGlySerGlySerSerGlyAspAsnAlaAla-1235
1246-GlyGlnIleAsnAspArgIleGlyLeu-1254
1256-AspAspLeuGlyPheThrSerLysArgSerArgAsnAlaGlnThrGlyGluLeuAsnProAlaGlu-1277
1283-GlyLysGlnLeuThrGlyLys-1289
1299-SerSerAlaGluGlnSerVal-1305
1321-IleGlySerArgSerSerGlyGlyGluLeu-1330
1335-ArgPheAspArgPheSerGlySerAspLysLysAspSerAlaGlyAsnSerLysGlyLys-1354

Hydrophilic Regions - Hopp-Woods

56-PheAspGlyAspAsnTrpSerIleGluThrGluGlyAlaAspLeuLysIleSerArg-74
83-GluLeuMetArgArgSerLeuHis-90
105-ProThrProProLysGluGluArgProPro-114
130-AspArgPheGluThrGlyLys-136
141-LysAlaPheAspLys-145
151-GluArgLeuAspAla-155
157-TyrArgTyrAspArgLysGlyHisArgLeuAspLeuLysAlaAlaAsp-172
200-GlyGlyLeuGluGlyLysThrIle-207
215-GlySerLeuLysAspValArgAla-222
244-GluSerLeuAspLysThrLeuGlu-251
292-GlySerLeuAspLeuGluAsnThrLys-300
302-GlyPheAlaAspArgAsnGlyIlePro-310
320-IleArgGlnAspGly-324
343-LeuSerGlyLysIleAspThrGluLysAspIleLeu-354
364-GlyAlaGluAspValLeu-369
373-PheLysGlyArgLeuAspGly-379
401-AlaArgThrAspGly-405
412-AspProAlaAsnGlyGlnArgLysLeuVal-421
442-LeuPheLysAspArgLeuLeuLysLeuAspIleArgSerArgAlaPheAspProSerArgIleAspPro-464
480-GluLeuAlaLysGluLysPheThrGly-488
508-IleValTyrGluSerArgHisLeuPro-516
522-LeuArgLeuGlyArgAsnIleIleLysThrAspGlyGlyPheGlyLysLysGlyAspArgLeuAsn-543
570-GlyAspLeuAspGlyGlyIleArgThrPheGluThrAspLeuSerGlyAlaAla-587
594-LysAlaAlaAspIleArgSer-600
607-GlySerProAspThrSerArgProIleArgAlaAspIleLysGlySerArgLeuSerLeu-626
631-GluValValAspThrAlaAspLeuMetLeu-640
647-HisArgIleArgThr-651
657-LeuAspGlyLysProPheLysPheAspLeuAspAla-668
670-GlyGlyIleAsnArgGluLeuThrArgTrpLysGly-681
704-AlaGlyAlaGluArgValAla-710
729-SerTrpAspLysLysThrGlyIleSerAlaLysGlyGlyAla-742
783-SerArgGlnSerGly-787
806-ThrArgPheGlnAsnAspArgIle-813
819-GlyGlyAlaArgPheGlyArgIleAsnAlaAspLeuAspIle-832
1001-LeuLysPheArgHisGluGlyThrAlaGluLeu-1011
1017-MetGluAsnSerGlyProAspValAspIle-1026
1031-AspLysTyrArgIleLeuSerArgProAsnArgArgLeuThr-1044
1049-ThrArgLeuArgTyrSerPro-1055
1065-IleLysThrAspGln-1069

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1075-GlnLysSerSerMet-1079
 1091-GluValLysLysGluAlaAla-1097
 1109-AspLeuAsnAspGlyIleArg-1115
 1146-ArgValIleLysGlyArgTyrLysAlaTyrGlyGlnAspLeuAspIleThrLys-1163
 1179-IleArgAlaGluArgArgLeuSer-1186
 1209-GluProMetSerGluLysAspLysLeu-1217
 1225-AlaGlySerGlySerSerGlyAspAsnAlaAla-1235
 1248-IleAsnAspArgIleGlyLeu-1254
 1259-GlyPheThrSerLysArgSerArgAsnAlaGlnThrGlyGluLeuAsnPro-1275
 1300-SerAlaGluGlnSerVal-1305
 1321-IleGlySerArgSerSerGlyGly-1328
 1335-ArgPheAspArgPheSerGlySerAspLysLysAspSerAlaGlyAsnSerLysGlyLys-1354
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AMPHI Regions - AMPHI

69-GluIleLysAspMetVal-74
 102-ProAspAsnValLysThr-107
 145-ValAlaIleLeuGlyAsp-150
 157-LeuAlaGluTyrTyrArgAsnAlaLeuGluAsnTrpGlnGlnProValGlySer-174
 198-ProLeuAlaLysLeuGlyAsn-204
 238-ThrGlnArgTyrProGluGlnIleValSerGlyLeuAlaArgPheGlnProGlyThr-256
 326-AspTyrTyrAsnLeuPheAsnLys-333
 354-IleSerGlnProArg-358
 375-ThrThrGlnAsnLeu-379
 428-ThrAlaSerTrpLysArgGlnLeuLeu-436
 455-ThrLeuGlyAlaPhe-459
 513-GlyAlaSerSerVal-517
 555-LeuSerGlyAlaValPheHisAspMetGlyAspAlaAlaAlaAsn-569
 584-ArgTrpPheSerProLeu-589

Antigenic Index - Jameson-Wolf

1-MetHisAspThrArgThrMetMet-8
 30-AlaAspLeuSerGluAsnLysAla-37
 43-PheLysAsnLysSerProAspThrGluSerValLysLeuLysProLysPheProVal-61
 63-IleAspThrGlnAspSerGluIleLysAspMetValGluGluHisLeu-78
 83-GlnGlnGlnGluGluValLeuAspLysGluGlnThr-94
 97-LeuAlaGluGluAlaProAspAsnValLysThrMetLeuArgSerLysGlyTyrPheSerSerLysValSerLeuThrGluLysAspGlyAla-127
 133-ThrProGlyProArgThrLysIle-140
 151-IleLeuSerAspGlyAsnLeuAlaGluTyrTyrArgAsnAlaLeuGluAsnTrpGln-169
 172-ValGlySerAspPheAspGlnAspSerTrpGluAsnSerLysThrSerVal-188
 192-ValThrArgLysAlaTyrPro-198
 201-LysLeuGlyAsnThrArgAlaAlaValAsnProAspThrAlaThrAla-216
 223-AspSerGlyArgProIleAla-229
 234-GluIleThrGlyThrGlnArgTyrProGluGlnIle-245
 252-PheGlnProGlyThrProTyrAspLeu-260
 270-LeuGluGlnAsnGlyHisTyrSerGly-278
 283-AlaAspPheAspArgLeuGlnGlyAspArgValProVal-295
 298-SerValThrGluValLysArgHisLysLeuGluThrGlyIleArgLeuAspSerGluTyrGlyLeuGlyGly-321
 342-AspMetAspLysTyrGluThr-348
 355-SerGlnProArgAsnTyrArgGlyAsnTyrTrp-365
 368-AsnValSerTyrAsnArgSerThrThrGlnAsnLeuGluLysArgAlaPheSerGlyGly-387
 391-ValArgAspArgAlaGlyIleAspAlaArgLeuGly-402
 405-PheLeuAlaGluGlyArgLysIleProGlySerAspIleAspLeuGlyAsnSerHisAla-424
 430-SerTrpLysArgGlnLeu-435

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441-HisProGluAsnGlyHisTyrLeuAspGlyLysIle-452
 468-ThrSerAlaArgAlaGly-473
 476-PheThrProGluAsnLysLysLeu-483
 496-ValAlaArgAspAsnAlaAsnValPro-504
 509-PheArgSerGlyGlyAlaSerSerValArgGlyTyrGluLeuAspSer-524
 534-ValLeuProGluArgAlaLeu-540
 562-AspMetGlyAspAla-566
 568-AlaAsnPheLysArgMetLysLeuLysHisGlySerGlyLeu-581
 598-TyrGlyHisSerAspLysLysIleArg-606

Hydrophilic Regions - Hopp-Woods

1-MetHisAspThrArgThrMetMet-8
 30-AlaAspLeuSerGluAsnLysAla-37
 44-LysAsnLysSerProAspThrGluSerValLysLeuLysProLysPheProVal-61
 63-IleAspThrGlnAspSerGluIleLysAspMetValGluGluHisLeu-78
 84-GlnGlnGluGluValLeuAspLysGluGlnThr-94
 97-LeuAlaGluGluAlaProAspAsnValLysThrMetLeuArgSer-111
 119-ValSerLeuThrGluLysAspGlyAla-127
 134-ProGlyProArgThrLysIle-140
 174-SerAspPheAspGlnAspSerTrpGluAsnSerLysThr-186
 192-ValThrArgLysAlaTyrPro-198
 206-ArgAlaAlaValAsnProAspThrAlaThr-215
 239-GlnArgTyrProGlu-243
 283-AlaAspPheAspArgLeuGlnGlyAspArgValProVal-295
 298-SerValThrGluValLysArgHisLysLeuGluThrGlyIleArgLeuAspSerGluTyr-317
 342-AspMetAspLysTyrGluThr-348
 373-ArgSerThrThrGlnAsnLeuGluLysArgAlaPhe-384
 392-ArgAspArgAlaGlyIleAspAlaArgLeuGly-402
 405-PheLeuAlaGluGlyArgLysIleProGlySerAspIleAspLeu-419
 478-ProGluAsnLysLysLeu-483
 496-ValAlaArgAspAsnAlaAsn-502
 518-ArgGlyTyrGluLeuAspSer-524
 534-ValLeuProGluArgAlaLeu-540
 562-AspMetGlyAspAla-566
 568-AlaAsnPheLysArgMetLysLeuLysHis-577
 600-HisSerAspLysLysIleArg-606

a287**AMPHI Regions - AMPHI**

29-LysSerAlaAspThrLeuSerLysProAlaAla-39
 77-GlyGlyGlnAspMet-81
 109-AsnAspMetProGlnAsn-114
 131-MetProThrArgAspMetGlyAsnGlnAlaProAspAlaGlyGluSerAlaGlnProAlaAsnGlnProAsp
 MetAlaAsnAlaAlaAspGlyMet-162
 171-GluAsnAlaGlyAsnThrAlaAspGlnAlaAlaAsnGlnAlaGluAsn-186
 192-SerGlnAsnProAla-196
 206-GlyGlySerAspPhe-210
 213-IleAsnValAlaAsnGly-218
 256-LeuSerAspGluGluLysIleAsnLysTyrLysLys-267
 306-PheArgArgSerAlaArg-311
 419-LysSerValAspGlyIleIleAspSer-427
 447-PheLysGlyThrTrpThr-452

 459-ValSerGlyArgPheTyr-464

Antigenic Index - Jameson-Wolf

17-AlaCysGlyGlyGlyGlyGlyGlySerProAspValLysSerAlaAspThrLeuSerLysProAla-38
 42-ValThrGluAspValGlyGluGluValLeuProLysGluLysLysAspGluGluAlaValSerGlyAlaProG
 lnAlaAspThrGlnAspAlaThrAlaGlyLysGlyGlyGlnAspMet-81
 85-SerAlaGluAsnThrGlyAsnGlyGlyAlaAlaThrThrAspAsnProGluAsnLysAspGluGlyProGlnA
 snAspMetProGlnAsnAlaAlaAspThrAspSerSerThrProAsnHisThrProAlaProAsnMetProThrAr
 gAspMetGlyAsnGlnAlaProAspAlaGlyGluSerAlaGlnProAlaAsnGlnProAspMetAlaAsnAlaAla
 AspGlyMetGlnGlyAspAspProSerAlaGlyGluAsnAlaGlyAsnThrAlaAspGlnAlaAlaAsnGlnAlaG
 luAsnAsnGlnValGlyGlySerGlnAsnProAlaSerSerThrAsnProAsnAlaThrAsnGlyGlySerAspPh
 eGlyArg-212
 214-AsnValAlaAsnGlyIleLysLeuAspSerGlySerGluAsnVal-228
 232-HisCysLysAspLysValCysAspArgAspPheLeuAspGluGluAlaProProLysSerGluPheGluLys
 LeuSerAspGluGluLysIleAsnLysTyrLysLysAspGluGlnArgGluAsnPhe-274
 278-ValAlaAspArgValGluLysAsnGlyThrAsnLys-289
 293-IleTyrLysAspLysSerAlaSerSerSerSerAlaArgPheArgArgSerAlaArgSerArgArgSerLeu
 ProAla-318
 332-IleValAspGlyGluAla-337
 342-GlyHisSerGlyAsn-346
 349-AlaProGluGlyAsnTyrArgTyrLeu-357
 360-GlyAlaGluLysLeuSerGlyGlySer-368
 374-GlnGlyGluProAlaLysGlyGluMet-382
 397-HisMetGluAsnGlyArgProSerProSerGlyGlyArgPheAlaAla-412

 414-ValAspPheGlySerLysSerValAspGlyIleIleAspSerGlyAspAspLeuHisMetGlyThrGlnLys
 Phe-438
 442-IleAspGlyAsnGlyPheLysGlyThrTrpThrGluAsnGlyGlyGlyAspValSerGly-461
 463-PheTyrGlyProAlaGlyGluGluValAlaGlyLysTyrSerTyrArgProThrAspAlaGluLysGlyGly
 Phe-487
 491-AlaGlyLysLysGluGlnAsp-497

Hydrophilic Regions - Hopp-Woods

22-GlyGlyGlySerProAspValLysSerAlaAspThrLeuSerLysProAla-38
 42-ValThrGluAspValGlyGluGluValLeuProLysGluLysLysAspGluGluAlaValSer-62
 65-ProGlnAlaAspThrGlnAspAlaThrAlaGlyLysGlyGlyGlnAsp-80
 85-SerAlaGluAsnThrGly-90
 95-AlaThrThrAspAsnProGluAsnLysAspGluGlyProGlnAsnAspMetProGlnAsnAlaAlaAspThrA
 spSerSerThr-122
 131-MetProThrArgAspMetGlyAsnGlnAlaProAspAlaGlyGluSerAlaGln-148
 151-AsnGlnProAspMetAlaAsnAlaAlaAspGlyMetGlnGlyAspAspProSerAlaGlyGluAsnAlaGly
 AsnThrAlaAspGlnAlaAlaAsnGlnAlaGluAsnAsnGln-188
 193-GlnAsnProAlaSer-197
 206-GlyGlySerAspPheGlyArg-212
 219-IleLysLeuAspSerGlySerGlu-226
 232-HisCysLysAspLysValCysAspArgAspPheLeuAspGluGluAlaProProLysSerGluPheGluLys
 LeuSerAspGluGluLysIleAsnLysTyrLysLysAspGluGlnArgGluAsnPhe-274
 278-ValAlaAspArgValGluLysAsnGlyThr-287
 294-TyrLysAspLysSerAlaSerSerSerSerAlaArgPheArgArgSerAlaArgSerArgArgSerLeuPro
 -317
 332-IleValAspGlyGluAla-337
 360-GlyAlaGluLysLeuSer-365
 374-GlnGlyGluProAlaLysGlyGluMet-382
 399-GluAsnGlyArgProSerProSerGlyGly-408

 414-ValAspPheGlySerLysSerValAspGlyIleIleAspSerGlyAspAspLeuHis-432
 455-GlyGlyGlyAspValSer-460

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467-AlaGlyGluGluValAlaGly-473

475-TyrSerTyrArgProThrAspAlaGluLysGlyGly-486

491-AlaGlyLysLysGluGlnAsp-497

a288**AMPHI Regions** - AMPHI

7-ValSerArgValLeu-11

54-IleValThrLysCysAla-59

61-ArgProTyrArgThrPheSerProLeuProVal-71

97-HisSerThrLeuArg-101

150-AlaLeuPheGlnAlaGlyPheAspLysAlaValGln-161

Antigenic Index - Jameson-Wolf

2-HisThrGlyGlnAla-6

28-AsnLeuProGluArgSerAlaGlySer-36

58-CysAlaValArgProTyrArgThrPheSerPro-68

72-LeuProLysGlnProSerAla-78

89-LeuProArgProAlaValAsnArgHisSerThrLeuArgSerProAspPheProProArgMet-109

113-IleArgGlyAspCysLeuPro-119

126-IleIleThrArgAsnAlaLysMetProSerGluThrValGlnValSerAspGlyIleGlnProLys-147

155-GlyPheAspLysAlaVal-160

Hydrophilic Regions - Hopp-Woods

28-AsnLeuProGluArgSerAla-34

58-CysAlaValArgPro-62

98-SerThrLeuArgSerProAspPheProPro-107

113-IleArgGlyAspCys-117

126-IleIleThrArgAsnAlaLysMetProSerGluThrValGlnVal-140

155-GlyPheAspLysAlaVal-160

a292**AMPHI Regions** - AMPHI

7-LysIleLeuThrProPheThrValLeuProLeu-17

40-GlyLysSerValAla-44

62-ValLeuSerValSerGlu-67

69-ProValLysGlyIleTyrGlu-75

110-GluArgAlaAlaAspLeu-115

124-ProLeuAspLysAlaIleLysGluValArgGly-134

150-PheCysLysArgLeuGluHisGluPheGluLysMetThrAspValThr-165

195-LysAlaTrpThrAspTrpMetArg-202

212-IleCysAspAsnProVal-217

Antigenic Index - Jameson-Wolf

1-MetLysThrLysLeu-5

23-ThrProValSerAsnAlaAsnAlaGluProAlaValLysAlaGluSerAlaGlyLysSerVal-43

47-LeuLysAlaArgLeuGluLysThrTyrSerAlaGlnAspLeuLys-61

66-SerGluThrProValLysGlyIle-73

85-TyrThrAspAlaGluGlyGlyTyr-92

99-IleAsnIleAspThrArgLysAsnLeuThrGluGluArgAlaAlaAspLeuAsnLys-117

124-ProLeuAspLysAlaIleLysGluValArgGlyAsnGlyLysLeuLysVal-140

142-ValPheSerAspProAspCysProPhe-150

152-LysArgLeuGluHisGluPheGluLysMetThrAsp-163

177-HisProAspAlaAlaArgLysAla-184

189-CysGlnProAspArgAlaLysAla-196

200-TrpMetArgLysGlyLysPheProVal-208

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210-GlySerIleCysAspAsnProValAlaGluThrThrSerLeuGlyGlu-225
 237-PheProAsnGlyArgSerGlnSerGlyTyrSerPro-248
 250-ProGlnLeuGluGluIleIleArgLysAsnGln-260

Hydrophilic Regions - Hopp-Woods

1-MetLysThrLysLeu-5
 28-AlaAsnAlaGluProAlaValLysAlaGluSerAlaGlyLysSerVal-43
 47-LeuLysAlaArgLeuGluLysThrTyrSer-56
 99-IleAsnIleAspThrArgLysAsnLeuThrGluGluArgAlaAlaAspLeuAsnLys-117
 124-ProLeuAspLysAlaIleLysGluValArgGlyAsnGlyLysLeuLys-139
 144-SerAspProAspCysProPhe-150
 152-LysArgLeuGluHisGluPheGluLysMetThrAsp-163
 179-AspAlaAlaArgLysAla-184
 190-GlnProAspArgAlaLysAla-196
 200-TrpMetArgLysGlyLysPhe-206
 240-GlyArgSerGlnSer-244
 250-ProGlnLeuGluGluIleIleArgLysAsnGln-260

a294**AMPHI Regions - AMPHI**

27-ArgPheProAlaAlaPheArgArgTyrSer-36
 45-LysProAlaGlyThr-49
 51-TrpHisArgValArgArgPheLysSerAsnArgArgThr-63
 65-GlyGlyLysProLeuLysLysThrTyrArg-74
 92-AsnIleAlaGluArgAlaArgGluSerProArgArgTyrGlyLysArgTyrAlaAspIleGlyAspAsp-114
 133-AlaValAlaHisIleValHisLeu-140
 176-AlaMetSerTyrArg-180
 206-SerIleLeuGlyGluProPheAlaThrSerPheGly-217
 227-AlaPheSerValLeuAlaHisPhe-234
 247-ThrValGlyTrpSerLysTyrIleHisThrVal-257

Antigenic Index - Jameson-Wolf

20-AlaValArgThrSerSerAsnArgPhe-28
 32-PheArgArgTyrSerAlaPheArg-39
 44-ProLysProAlaGlyThrProTrpHisArgValArgArgPheLysSerAsnArgArgThrArgGlyGlyLysProLeuLysLysThrTyrArgProArgArgAlaGluCysArgCysArgArgAlaArgThr-87
 93-IleAlaGluArgAlaArgGluSerProArgArgTyrGlyLysArgTyrAlaAspIleGlyAspAspSerAspThrIleArg-119
 121-ArgValPheArgLeuGluTyr-127
 161-HisThrGlyArgValSerCysGluAlaArgArgGluValGluLysAlaMetSer-178
 240-LysMetAlaArgSer-244

Hydrophilic Regions - Hopp-Woods

20-AlaValArgThrSerSerAsnArg-27
 52-HisArgValArgArgPheLysSerAsnArgArgThrArgGlyGlyLysProLeuLysLysThrTyrArgProArgArgAlaGluCysArgCysArgArgAlaArgThr-87
 93-IleAlaGluArgAlaArgGluSerProArgArgTyrGlyLysArgTyrAlaAspIleGlyAspAspSerAspThrIleArg-119
 121-ArgValPheArgLeuGluTyr-127
 165-ValSerCysGluAlaArgArgGluValGluLysAlaMetSer-178

a295**AMPHI Regions - AMPHI**

79-PheArgGlnProArg-83
 112-ArgPhePheArgGlnPro-117
 130-AlaPheLeuHisGlnIle-135
 175-AsnLeuArgGlyPhePro-180

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188-HisGlnGlnArgArgIleGlyLysThrLeuProGlnLeu-200
 232-ThrLeuAlaProMetArgProIleCysArgGlyThrSerGly-245
 262-TyrIleIleLysProLeuGluHis-269

Antigenic Index - Jameson-Wolf

4-MetAlaArgHisAspAspGlnGlnGly-12
 18-LeuProArgArgGlnGln-23
 49-PheLysLeuProArgGlnArgPheHisLeu-58
 73-HisGlyCysArgAlaGlnPheArgGlnProArgArgIleArgLeu-87
 91-GlnThrAlaArgGlnArgSerGlyGlyArgThrAspGlnAlaAla-105
 114-PheArgGlnProArgIleArgGlnLysGlnArgHisThrArg-127
 136-GlyProAspPheGly-140
 143-GlnAsnAlaGluHisArgAla-149
 170-CysIleArgLysGlnAsnLeuArgGlyPheProSerArgArgGlyHisLeuArgHisGlnGlnArgArgIle
 GlyLysThrLeu-197
 205-LeuGlyGlyThrArgPheProAspArgAsnGlyValTyrProAsnArgAlaGlyAsnGlyIleArgIleArg
 Leu-229
 238-ProIleCysArgGlyThrSerGly-245
 252-ProTyrProTyrArgArgLysGlnProGlnTyr-262
 273-SerCysLysThrAsnAlaValArgThrValArgThrAlaPheArgGlnArgAsnGlnIleSer-293

Hydrophilic Regions - Hopp-Woods

5-AlaArgHisAspAspGlnGlnGly-12
 18-LeuProArgArgGlnGln-23
 77-AlaGlnPheArgGlnProArgArgIleArgLeu-87
 93-AlaArgGlnArgSerGlyGlyArgThrAspGlnAlaAla-105
 117-ProArgIleArgGlnLysGlnArgHisThrArg-127
 145-AlaGluHisArgAla-149
 170-CysIleArgLysGlnAsnLeu-176
 179-PheProSerArgArgGlyHisLeuArgHisGlnGlnArgArgIleGlyLys-195
 209-ArgPheProAspArgAsnGly-215
 225-IleArgIleArgLeu-229
 238-ProIleCysArgGlyThr-243
 254-ProTyrArgArgLysGlnPro-260
 280-ArgThrValArgThrAlaPheArgGlnArgAsnGlnIle-292

a297**AMPHI Regions** - AMPHI

35-ArgThrGluArgVal-39
 69-GlnProGlyAspSerLeuAlaAspValLeuAla-79
 86-AspGluIleAlaArgIleThrGluLysTyr-95
 157-LeuProThrLeuArg-161
 199-LeuLysGluGlyAspAla-204
 272-LeuValTyrThrArgIleSerSer-279
 333-HisAlaAsnGlyValGluThrLeuTyrAlaHisLeuSerAlaPheSer-348

Antigenic Index - Jameson-Wolf

8-AlaLysHisArgLysTyrAla-14
 32-SerThrGluArgThrGluArgValArgProGlnArgValGluGlnLysLeuPro-49
 52-SerTrpGlyGlySerGly-57
 67-AlaValGlnProGlyAspSerLeuAla-75
 78-LeuAlaArgSerGlyMetAlaArgAspGluIleAlaArgIleThrGluLysTyrGlyGlyGluAlaAspLeuA
 rgHisLeuArgAlaAspGlnSerVal-110
 115-GlyGlyAspGlyGlyAlaArgGluVal-123
 127-ThrAspGluAspGlyGluArgAsnLeuValAlaLeuGluLysLysGlyGlyIleTrpArgArgSerAlaSer
 GluAlaAspMetLysVal-156

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167-ThrSerAlaArgGlySerLeuAlaArgAlaGluValProValGluIleArgGluSerLeuSer-187
 194-PheSerLeuAspGlyLeuLysGluGlyAspAlaVal-205
 228-GluValValLysGlyGlyThrArgHis-236
 240-TyrTyrArgSerAspLysGluGlyGlyGlyGlyGlyAsnTyrTyrAspGluAspGlyArgValLeuGlnGlu
 LysGlyGlyPheAsn-268
 276-ArgIleSerSerProPheGlyTyr-283
 295-HisThrGlyIleAspTyrAla-301
 303-ProGlnGlyThrProValArgAlaSerAlaAspGly-314
 318-PheLysGlyArgLysGlyGlyTyrGly-326
 333-HisAlaAsnGlyValGlu-338
 350-AlaGluGlyAsnValArgGlyGlyGlu-358
 365-SerThrGlyArgSerThrGlyProHisLeu-374
 376-TyrGluAlaArgIleAsnGlyGlnProValAsn-386
 393-ProThrProGluLeuThrGlnAlaAspLysAlaAla-404
 408-GlnLysGlnLysAlaAspAlaLeu-415
 426-ValSerGlnSerAsp-430

Hydrophilic Regions - Hopp-Woods

8-AlaLysHisArgLysTyrAla-14
 32-SerThrGluArgThrGluArgValArgProGlnArgValGluGlnLysLeu-48
 68-ValGlnProGlyAspSerLeuAla-75
 82-GlyMetAlaArgAspGluIleAlaArgIleThrGluLysTyrGlyGlyGluAlaAspLeuArgHisLeuArgA
 laAspGln-108
 117-AspGlyGlyAlaArgGlu-122
 127-ThrAspGluAspGlyGluArgAsnLeuValAlaLeuGluLysLysGlyGlyIleTrpArgArgSerAlaSer
 GluAlaAspMetLysVal-156
 167-ThrSerAlaArgGlySerLeuAlaArgAlaGluValProValGluIleArgGluSerLeu-186
 194-PheSerLeuAspGlyLeuLysGluGlyAspAlaVal-205
 228-GluValValLysGlyGlyThrArg-235
 242-ArgSerAspLysGluGlyGlyGly-249
 253-TyrTyrAspGluAspGlyArgValLeuGlnGluLysGlyGlyPhe-267
 306-ThrProValArgAlaSerAla-312
 319-LysGlyArgLysGlyGlyTyr-325
 350-AlaGluGlyAsnValArgGlyGlyGlu-358
 366-ThrGlyArgSerThrGly-371
 378-AlaArgIleAsnGly-382
 396-GluLeuThrGlnAlaAspLysAlaAla-404
 408-GlnLysGlnLysAlaAspAlaLeu-415

a298**AMPHI Regions - AMPHI**

6-SerLeuPheAlaSerIleLeuMetSerAlaLeuIleAla-18
 26-IleAsnAlaTyrTrpGlnGln-32
 42-ProLeuAlaAlaTyr-46
 62-LeuSerAspGlyIleLysAlaPhe-69
 82-GlySerAlaAspMetPro-87
 134-ValGlnLysSerLeuLys-139
 157-SerTyrProSerPhePheAspTrpProLysThrIleGluGluThrLeuLysLysHisProGlu-177
 188-AsnAspProTrpAsp-192
 208-AlaGlnGluTyrLeuLysArgValAspArgIleLeuGluAlaAlaHis-223
 245-GlnMetArgTyrLeuAspLysLeuLeuSerGluTyrLeu-257
 276-ArgTyrThrAspSer-280
 308-AlaLysIleMetGluLys-313

Antigenic Index - Jameson-Wolf

22-SerGlnAsnProIleAsnAlaTyr-29

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34-TyrHisArgAsnSerProLeuGluPro-42
 47-GlyTrpTrpArgSerGlyAlaAlaLeuGlnGlu-57
 70-LeuSerGlyGluThrProProThrAlaGlnAspGlyGlySerAlaAspMetProSerGluAlaAlaAlaProGluThrAlaProGlnThrGlyGluThrGluTrpLysGlnAsnThrGlu-109
 114-ArgThrGlyAspLys-118
 136-LysSerLeuLysGlnGlnTyrGlyIleGluSerValAsnLeuSerLysGlnSerThrGly-155
 162-PheAspTrpProLysThrIleGluGluThrLeuLysLysHisProGlu-177
 186-GlyProAsnAspProTrp-191
 194-ProValGlyLysArgTyrLeu-200
 203-AlaSerAspGluTrpAla-208
 211-TyrLeuLysArgValAspArgIleLeuGlu-220
 236-TyrMetLysLysAlaLysLeuAspGlyGlnMetArgTyrLeuAsp-250
 270-LeuSerGlyGlyLysAspArgTyrThrAspSerValAsnValAsnGlyLysProValArgTyrArgSerLysAspGlyIle-296
 318-ProSerThrGlnProSerSerThrGlnPro-327

Hydrophilic Regions - Hopp-Woods

73-GluThrProProThrAlaGlnAspGlyGlySerAlaAspMetProSerGluAlaAlaAlaProGluThrAlaProGlnThrGlyGluThrGluTrpLysGlnAsnThrGlu-109
 148-AsnLeuSerLysGlnSerThr-154
 166-LysThrIleGluGluThrLeuLysLysHisProGlu-177
 211-TyrLeuLysArgValAspArgIleLeuGlu-220
 236-TyrMetLysLysAlaLysLeuAspGlyGlnMetArgTyrLeuAsp-250
 271-SerGlyGlyLysAspArgTyrThrAsp-279
 281-ValAsnValAsnGlyLysProValArgTyrArgSerLysAspGlyIle-296
 319-SerThrGlnProSerSerThrGlnPro-327

a299**AMPHI Regions - AMPHI**

54-AlaSerProTrpMetLysLysLeuGlnSerValAlaGlnGlySer-68
 71-ThrPheArgIleLeuGlnIleGly-78
 85-AspPhePheThrAspSerLeuArgLysArgLeuGlnLysThrTrpGly-100
 238-GlnLeuThrGlnTrpSerLysTrp-245
 247-AlaAspArgMetAsnAspLeuAlaGlnThr-256
 281-GluGlnLysTrpLeuAspThrValArgGlnIleArgAspSerLeu-295
 307-GluSerLeuLysAsnThrLeu-313
 322-ArgLeuThrGluValGlnGlnMetGlnArgArgIleAlaArgGln-336
 375-TyrGlnArgSerAlaGluMetLeuAlaAspSerLeuGluGluLeuValArgSerAlaAlaIleArg-396

Antigenic Index - Jameson-Wolf

1-MetAsnProLysHis-5
 35-ProSerAlaProTyrThrAspThrAsnGlyLeu-45
 48-AspTyrGlyAsnAlaSerAlaSerProTrpMetLysLysLeuGln-62
 65-AlaGlnGlySerGlyGluThr-71
 78-GlyAspSerHisThrAlaGlyAspPhePheThrAspSerLeuArgLysArgLeuGlnLysThrTrpGlyAspGlyGly-103
 110-AlaAsnValLysGlyGlnArg-116
 121-ArgHisAsnGlyAsnTrpGlnSerLeuThrSerArgAsnAsnThrGlyAspPheProLeu-140
 157-AlaSerAspGlyIleAlaSerLysGlnArgVal-167
 184-GlyAsnThrValSerAlaAsnGlyGlyGly-193
 221-GluAsnProAlaGlyGly-226
 241-GlnTrpSerLysTrpArgAlaAspArgMetAsnAspLeuAlaGlnThrGlyAla-258
 266-GlyThrAsnGluAlaPheGlyAspAsnIleAspIleAlaAspThrGluGlnLysTrp-284
 286-AspThrValArgGlnIleArgAspSerLeuPro-296
 305-AlaProGluSerLeuLysAsnThr-312
 319-ArgProValArgLeuThrGluValGlnGlnMetGlnArgArgIleAlaArgGlnGlyGlnThr-339

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361-GlyTrpAlaAlaLysAspGlyVal-368
 371-SerAlaLysGlyTyrGlnArgSerAlaGluMetLeuAlaAspSerLeuGluGluLeuValArg-391
 393-AlaAlaIleArgGln-397

Hydrophilic Regions - Hopp-Woods

67-GlySerGlyGluThr-71
 90-SerLeuArgLysArgLeuGlnLysThrTrpGly-100
 112-ValLysGlyGlnArg-116
 130-ThrSerArgAsnAsnThrGly-136
 159-AspGlyIleAlaSerLysGlnArgVal-167
 245-TrpArgAlaAspArgMetAsnAsp-252
 270-AlaPheGlyAspAsnIleAspIleAlaAspThrGluGlnLysTrp-284
 288-ValArgGlnIleArgAspSerLeuPro-296
 319-ArgProValArgLeuThrGlu-325
 327-GlnGlnMetGlnArgArgIleAlaArgGlnGly-337
 363-AlaAlaLysAspGlyVal-368
 374-GlyTyrGlnArgSerAlaGluMetLeuAlaAspSerLeuGluGluLeuValArg-391
 393-AlaAlaIleArgGln-397

a302**AMPHI Regions - AMPHI**

20-AspGlyArgPheLeuArgThrValGluTrpLeuGlyAsnMetLeuProHisPro-37
 81-ValValSerLeuLeuAspAlaAspGlyLeuIleLysIleLeuThrHisThrValLysAsnPheThrGlyPheAlaProLeuGlyThrValLeuValSerLeu-114
 127-SerAlaLeuMetArg-131
 176-GlyArgHisProLeuAlaGlyLeuAlaAlaAlaPheAlaGlyValSerGly-192
 201-GlyThrIleAspProLeuLeuAlaGlyIleThrGlnGlnAla-214
 239-ValIleAlaLeuIleGly-244
 271-ArgHisSerAsnGluIle-276
 294-LeuSerAlaLeuLeuAlaTrp-300
 308-IleLeuArgHisProGluThrGly-315
 341-TyrGlyArgValThrArgSerLeuArgGlyGluGlnGluValValAsnAlaMetAlaGluSerMetSer-363
 378-PheValAlaPhePheAsnTrpThrAsnIleGlyGlnTyrIle-391
 448-AlaProGluValIleGlnAlaAlaTyrArgIleGlyAspSerValThrAsnIleIleThrProMetMetSerTyrPheGlyLeuIleMetAla-478
 505-IleAlaTrpIleAlaLeuPheCysIle-513

Antigenic Index - Jameson-Wolf

8-LysGluLysGlnMetSerGlnThrAspThrGlnArgAspGlyArgPhe-23
 61-SerValProAspProArgProValGlyAlaLysGlyArgAlaAspAspGlyLeu-78
 85-LeuAspAlaAspGlyLeu-90
 119-IleAlaGluLysSerGly-124
 134-LeuThrLysSerProArgLysLeuThr-142
 152-LeuSerAsnThrAlaSerGlu-158
 175-LeuGlyArgHisProLeu-180
 250-LysIleValGluProGlnLeuGlyProTyrGlnSerAspLeuSerGlnGluGluLysAspIleArgHisSerAsnGluIleThrProLeuGluTyrLys-282
 304-ProAlaAspGlyIleLeuArgHisProGluThrGlyLeuValSer-318
 343-ArgValThrArgSerLeuArgGlyGluGlnGluVal-354
 402-ValGlyLeuGlyGly-406
 482-LysTyrLysLysAspAlaGlyVal-489

Hydrophilic Regions - Hopp-Woods

8-LysGluLysGlnMetSerGlnThrAspThrGlnArgAspGlyArgPhe-23
 63-ProAspProArgProValGlyAlaLysGlyArgAlaAspAspGlyLeu-78

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85-LeuAspAlaAspGlyLeu-90
 119-IleAlaGluLysSerGly-124
 136-LysSerProArgLysLeu-141
 263-LeuSerGlnGluGluLysAspIleArgHisSerAsnGlu-275
 307-GlyIleLeuArgHisProGlu-313
 343-ArgValThrArgSerLeuArgGlyGluGlnGluVal-354
 482-LysTyrLysLysAspAlaGly-488

a305**AMPHI Regions - AMPHI**

10-LeuMetMetGlyLeuValGluGlyPheThrGluPheLeuPro-23
 33-PheGlyAsnLeuIleAspPheHisSer-41
 66-PheSerAsnValLeuHis-71
 93-AlaAlaValMetGly-97
 99-LeuPheGlyLysGlnIleLysGluTyrLeuPhe-109
 141-AspValAspAlaLeuArgProIleAspAla-150
 155-ValAlaGlnValPheAla-160
 202-AlaTyrAspValLeuLysHisTyrArgPhePheThrLeuHis-215
 222-IleGlyPheValAlaAlaPheValSer-230
 235-ValLysAlaLeuLeuArg-240

Antigenic Index - Jameson-Wolf

40-HisSerAsnHisLys-44
 61-GluTyrArgGlnArgPheSerAsn-68
 72-GlyValGlyLysAspArgLysAlaAsn-80
 128-ValGluLysArgGlnSerArgAlaGluProLysIleValAsp-141
 143-AspAlaLeuArgProIleAsp-149
 163-ProGlyThrSerArgSerGlySer-170
 180-IleGluArgLysThrAlaThr-186
 241-PheValSerLysLysAsnTyr-247

Hydrophilic Regions - Hopp-Woods

62-TyrArgGlnArgPhe-66
 73-ValGlyLysAspArgLysAlaAsn-80
 128-ValGluLysArgGlnSerArgAlaGluProLysIleValAsp-141
 143-AspAlaLeuArgProIleAsp-149
 165-ThrSerArgSerGlySer-170
 180-IleGluArgLysThrAlaThr-186
 242-ValSerLysLysAsn-246

a308-2**AMPHI Regions - AMPHI**

6-PheTyrArgIleLeuGlyValAlaAspAsnLeuTyrProTyrLeu-20
 27-ThrIleIleAlaGlyLeu-32
 64-AlaLeuGluLeuLeuArgAlaGlnAsp-72
 83-AlaGluMetAlaArgAlaSerGlu-90
 101-LeuAlaAspPheValHisProIleGlyAsnIleGlyAlaCys-114
 131-SerMetArgThrLeuAlaSerValValHisGlyPheGlyAsp-144
 172-LeuAlaHisLeuAspAsnMetLysArgValThrGlu-183

Antigenic Index - Jameson-Wolf

39-TrpGluArgArgMetMetVal-45
 68-LeuArgAlaGlnAspIleGluThr-75
 80-SerLysGlyAlaGluMetAlaArgAlaSerGluThrAlaTyrAlaArgAspGluVal-98
 118-GlyThrPheLysThrAspGlyMet-125
 142-PheGlyAspAsnLeuLeu-147
 149-ArgAlaAlaAspValValLeuLysGluArgArgArgLeu-161

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166-ArgGluThrProLeu-170
176-AspAsnMetLysArgValThrGluMetGly-185
195-MetTyrArgLysProGlnThrAlaAspAspIleVal-206
219-IleAspThrProAspSerAlaGlu-226

Hydrophilic Regions - Hopp-Woods

39-TrpGluArgArgMetMetVal-45
68-LeuArgAlaGlnAspIleGluThr-75
81-LysGlyAlaGluMetAlaArgAlaSerGlu-90
92-AlaTyrAlaArgAspGluVal-98
120-PheLysThrAspGly-124
149-ArgAlaAlaAspValValLeuLysGluArgArgArgLeu-161
176-AspAsnMetLysArgValThrGlu-183
195-MetTyrArgLysProGlnThrAlaAspAspIleVal-206
220-AspThrProAspSerAlaGlu-226

a311-1**AMPHI Regions - AMPHI**

7-SerHisTrpArgValLeuAlaGluLeuAlaAspGlyLeuProGlnHisValSerGlnLeuAlaArgMetAlaAsp-31
37-LeuAsnGlyPheTrpGlnGlnMetProAlaHisIleArgGlyLeuLeuArg-53
55-HisAspGlyTyrTrpArgLeuValArgProLeuAlaValPheAspAlaGluGlyLeuArgGluLeuGly-77
124-ArgGlnGlyArgLysTrpSerHisArgLeu-133
165-ArgAlaLeuSerArgLeu-170
219-ValGluAsnAlaAlaSerValGlnSerLeuPheGln-230
245-GluThrLeuLeuAlaGlu-250
291-PheGluGlyThrValLysGlyValAspGlyGlnGlyVal-303
362-ThrValGlySerAlaProTyrArgAspLeuSerProLeu-374
376-AlaGluTrpAlaGluLysVal-382
391-CysAlaValCysGlyGluPheLysLys-399
426-TyrArgHisProGluGluHisGlySerAspArgTrpPheAsnAlaLeuGlySer-443
493-AsnLeuAsnArgHisAla-498
511-AlaValAlaSerGlyMetMetAspAlaValCys-521
550-AlaAlaLysValAlaGluAlaLeuProPro-559
576-HisGlyLeuLeuAsnLeu-581

Antigenic Index - Jameson-Wolf

28-ArgMetAlaAspMetLysProGlnGln-36
50-GlyLeuLeuArgGlnHisAspGlyTyr-58
71-GluGlyLeuArgGluLeuGlyGluArgSerGlyPhe-82
86-LeuLysHisGluCysAlaSerSerAsnAspGluIleLeuGlu-99
102-ArgIleAlaProAspLysAlaHisLys-110
116-HisLeuGlnSerLysGlyArgGlyArgGlnGlyArgLysTrpSerHisArgLeuGlyGlu-135
145-PheAspArgProGlnTyrGluLeuGlySer-154
162-AlaCysArgArgAlaLeuSer-168
174-ThrGlnIleLysTrpProAsn-180
182-LeuValValGlyArgAspLysLeuGly-190
196-ThrValArgThrGlyGlyLysThrVal-204
215-LeuProLysGluValGluAsn-221
231-ThrAlaSerArgArgGlyAsnAlaAsp-239
258-TyrAlaArgAspGlyPheAla-264
272-AlaAlaAsnArgAspHisGlyLys-279
284-LeuArgAspGlyGluThrValPhe-291
293-GlyThrValLysGlyValAspGlyGlnGly-302
307-GluThrAlaGluGlyLysGlnThrValValSerGlyGluIleSerLeuArgSerAspAspArgProValSerValProLysArgArgAspSerGluArg-339

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344-AspGlyGlyAsnSerArgLeu-350
 364-GlySerAlaProTyrArgAspLeuSerProLeuGly-375
 378-TrpAlaGluLysValAspGlyAsnValArgIle-388
 395-GlyGluPheLysLysAlaGlnValGln-403
 405-GlnLeuAlaArgLysIleGlu-411
 424-AsnHisTyrArgHisProGluGluHisGlySerAspArgTrp-437
 440-AlaLeuGlySerArgArgPheSerArgAsnAla-450
 464-AlaLeuThrAspAspGlyHisTyrLeuGly-473
 483-MetLysGluSerLeuAla-488
 492-AlaAsnLeuAsnArgHisAlaGlyLysArgTyrPro-503
 529-GlyArgLeuLysGluLysThrGlyAlaGlyLysProVal-541
 547-GlyGlyGlyAlaAlaLysValAlaGlu-555
 565-AsnThrValArgValAlaAsp-571
 584-AlaGluGlyGlyGluSerGluHisThr-592

Hydrophilic Regions - Hopp-Woods

28-ArgMetAlaAspMetLysProGlnGln-36
 50-GlyLeuLeuArgGlnHis-55
 71-GluGlyLeuArgGluLeuGlyGluArgSerGlyPhe-82
 86-LeuLysHisGluCysAlaSerSerAsnAspGluIleLeuGlu-99
 102-ArgIleAlaProAspLysAlaHisLys-110
 118-GlnSerLysGlyArgGlyArgGlnGlyArgLysTrpSerHisArgLeuGlyGlu-135
 162-AlaCysArgArgAlaLeuSer-168
 183-ValValGlyArgAspLysLeuGly-190
 196-ThrValArgThrGlyGlyLys-202
 217-LysGluValGluAsn-221
 232-AlaSerArgArgGlyAsnAlaAsp-239
 259-AlaArgAspGlyPhe-263
 272-AlaAlaAsnArgAspHisGlyLys-279
 285-ArgAspGlyGluThrValPhe-291
 293-GlyThrValLysGlyValAspGly-300
 307-GluThrAlaGluGlyLysGlnThrValVal-316
 320-IleSerLeuArgSerAspAspArgProValSerValProLysArgArgAspSerGluArg-339
 346-GlyAsnSerArgLeu-350
 367-ProTyrArgAspLeuSer-372
 378-TrpAlaGluLysValAspGlyAsnVal-386
 395-GlyGluPheLysLysAlaGlnVal-402
 405-GlnLeuAlaArgLysIleGlu-411
 424-AsnHisTyrArgHisProGluGluHisGlySer-434
 442-GlySerArgArgPheSerArg-448
 464-AlaLeuThrAspAspGlyHis-470
 483-MetLysGluSerLeuAla-488
 493-AsnLeuAsnArgHisAlaGlyLysArgTyrPro-503
 529-GlyArgLeuLysGluLysThrGlyAlaGlyLysProVal-541
 549-GlyAlaAlaLysValAlaGlu-555
 565-AsnThrValArgValAlaAsp-571
 585-GluGlyGlyGluSerGluHisThr-592

a312**AMPHI Regions - AMPHI**

6-GlyGluIleLeuGluThrValLysMetValAla-16
 44-GlnAsnIleTyrAsnLysIleThrThrValGlyLys-55
 82-IleAlaGlnIleAlaAlaAlaThr-89
 95-ValSerValAlaGlnThrLeuAspLysAlaAlaLys-106
 109-GlyValSerPheIleGlyGlyPheSerAlaLeuValGln-121
 133-ArgSerIleProGluAlaMetLysThr-141

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167-GlyGluThrIleLysArgThr-173
182-GlyCysAlaLysIleValValPheCys-190
230-SerAspAlaThrThrLeuThrGluValAlaGluValValLysLys-244
249-IleThrArgValGlyGluLeuIleGlyArgGluAlaSerLys-262
281-ValGlyAspSerValAlaArgIleLeuGluGluMetGly-293
309-LeuAsnAspAlaVal-313
322-SerAlaValGlyGlyLeuSerGly-329
349-LeuThrLeuAspLysLeuGluAlaMetThrAla-359
374-ThrProAlaHisThrIleSerGlyIleIle-383
409-ValGlyAspSerValGluPheGlyGlyLeuLeuGly-420

Antigenic Index - Jameson-Wolf

4-GlnSerGlyGluIleLeuGlu-10
13-LysMetValAlaAspGlnAsnPheAspVal-22
35-IleSerThrAspIleAspVal-41
52-ThrValGlyLysAspLeuValAla-59
89-ThrHisAlaAspSer-93
100-ThrLeuAspLysAlaAlaLys-106
121-GlnLysGlyMetSerProSerAspGluValLeu-131
134-SerIleProGluAlaMetLysThrThrAsp-143
152-GlySerThrArgAla-156
161-AspAlaValArgLeuAlaGlyGluThrIleLysArgThrAlaGluIleThr-177
192-AlaValGluAspAsnProPhe-198
204-HisGlySerGlyGluAlaAspAla-211
225-AlaAlaLeuGluAsnSerAspAla-232
237-GluValAlaGluValValLys-243
251-ArgValGlyGluLeuIleGlyArgGluAlaSerLys-262
280-AlaValGlyAspSerValAlaArgIleLeuGlu-290
311-AspAlaValLysLysGlyGlyMet-318
334-ValSerGluAspGluGlyMet-340
352-AspLysLeuGluAla-356
370-ValProGlyAspThrProAla-376
383-IleAlaAspGluAlaAla-388
392-IleAsnSerLysThrThrAla-398
405-ThrGlyLysThrValGlyAspSerValGlu-414
426-ProValLysGluGlySerCys-432
435-PheValAsnArgGlyGlyArgIle-442
447-GlnSerMetLysAsn-451

Hydrophilic Regions - Hopp-Woods

18-GlnAsnPheAspVal-22
35-IleSerThrAspIleAspVal-41
52-ThrValGlyLysAspLeuValAla-59
100-ThrLeuAspLysAlaAlaLys-106
123-GlyMetSerProSerAspGluValLeu-131
134-SerIleProGluAlaMetLysThrThrAsp-143
161-AspAlaValArgLeuAlaGlyGluThrIleLysArgThrAlaGluIleThr-177
192-AlaValGluAspAsnPro-197
207-GlyGluAlaAspAla-211
225-AlaAlaLeuGluAsnSerAspAla-232
237-GluValAlaGluValValLys-243
251-ArgValGlyGluLeuIleGlyArgGluAlaSerLys-262
284-SerValAlaArgIleLeuGlu-290
311-AspAlaValLysLysGlyGlyMet-318
334-ValSerGluAspGluGlyMet-340

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352-AspLysLeuGluAla-356
 383-IleAlaAspGluAlaAla-388
 408-ThrValGlyAspSerValGlu-414
 426-ProValLysGluGlySerCys-432
 438-ArgGlyGlyArgIle-442
 447-GlnSerMetLysAsn-451

a313-2**AMPHI Regions - AMPHI**

27-GlyMetAspAspProArgThrTyrGlySerGly-37
 41-AlaThrAsnValLeu-45
 60-AspAlaAlaLysGly-64
 66-ValAlaValLeuLeuAlaArgValLeuGlnGluPro-77
 88-ValAlaLeuAlaAlaLeuValGlyHisMetTrpPro-99
 143-SerLeuAlaAlaLeuThrAlaThrIleAlaAlaProLeuAlaAla-157

Antigenic Index - Jameson-Wolf

26-TyrGlyMetAspAspProArgThrTyrGlySerGlyAsnProGlyAla-41
 46-ArgSerGlyLysLysLysAlaAla-53
 73-ValLeuGlnGluProLeuGlyLeuSerAspSerAla-84
 104-PheLysGlyGlyLysGlyVal-110
 180-ArgHisLysSerAsn-184
 189-IleLysGlyLysGluSerLysIleGlyGluLysArg-200

Hydrophilic Regions - Hopp-Woods

26-TyrGlyMetAspAspProArgThrTyrGly-35
 46-ArgSerGlyLysLysLysAlaAla-53
 105-LysGlyGlyLysGlyVal-110
 189-IleLysGlyLysGluSerLysIleGlyGluLysArg-200

a401**AMPHI Regions - AMPHI**

44-SerGlyValLysProTyrAsnAlaLeu-52
 65-CysTyrAsnCysHisSerGlnMetIleArgProPheArg-77
 112-ValGlyGlyArgTyrSerAspGluTrpHisArgIle-123
 157-MetLysAlaLeuArgLysValGlyThr-165
 172-IleAlaLysAlaProGluAlaLeu-179

Antigenic Index - Jameson-Wolf

5-GlnLeuAlaGluGluLysIle-11
 38-AlaAlaThrGlnProAlaSerGlyValLysProTyrAsn-50
 55-AlaGlyArgAspIleTyrIleArgGluGlyCysTyrAsnCysHis-69
 74-ArgProPheArgAlaGluThrGluArgTyrGlyHis-85
 90-GlyGluSerValTyr-94
 98-PheGlnTrpGlySerLysArgThrGlyProAspLeuAlaArgValGlyGlyArgTyrSerAspGluTrpHis-121
 125-LeuLeuAsnProArgAspValValProGluSerAsnMetPro-138
 146-AsnLysValAspValAspAla-152
 158-LysAlaLeuArgLysValGlyThrProTyrSerAspGluGluIleAlaLysAlaProGlu-177
 179-LeuAlaAsnLysSerGluLeuAspAla-187

Hydrophilic Regions - Hopp-Woods

5-GlnLeuAlaGluGluLysIle-11
 76-PheArgAlaGluThrGluArgTyrGly-84
 101-GlySerLysArgThrGlyProAspLeuAlaArgValGlyGlyArgTyrSerAspGluTrpHis-121
 127-AsnProArgAspValValPro-133
 146-AsnLysValAspValAspAla-152

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158-LysAlaLeuArgLysValGly-164
167-TyrSerAspGluGluIleAlaLysAlaProGlu-177
179-LeuAlaAsnLysSerGluLeuAspAla-187

a402**AMPHI Regions - AMPHI**

18-PheLeuSerGlyLeu-22
85-AlaGlyIleAlaAspPhe-90
100-ThrGlyPheSerGlyPheValHis-107
117-AlaValValArgGlyLeu-122
136-LysSerGlyArgGln-140
146-PheAlaAsnValAlaGly-151
218-ValPheGlnAsnIleAlaAspArgProAspArgLeuIle-230
261-AspValPheAsnSerValAsnGlyIleGlu-270
279-LysSerGlyIleArg-283
294-SerTrpAlaArgValLeuSerAlaIleProGluMetGln-306
344-ArgLysTrpLeuArgArgHisPro-351
376-AlaGluPheLeuLysGlnValGlnSerHisLeu-386
398-HisSerProHisAlaPheAlaThrAlaValHisSerIlePro-411
437-GlnArgLeuSerArgLeu-442
460-AlaAlaGlnLysVal-464

Antigenic Index - Jameson-Wolf

4-ValAsnThrLysProAsnThrSer-11
66-ArgIleCysArgSerArgPheValAsp-74
130-ValGlyThrAspGlyAsnLysSerGlyArgGlnValSer-142
222-IleAlaAspArgProAspArgLeuIleGluAsnLysHisGly-235
240-TyrHisArgAspGlyAspLysValVal-248
264-AsnSerValAsnGlyIleGluArg-271
277-SerLeuLysSerGlyIleArgArg-284
321-IleAlaAspGluProGln-326
331-LeuGlnAspLysArgValGluIleValLeuAspAspGlyArgLysTrpLeuArgArgHisProAspGluLysPheAsp-356
385-HisLeuThrProAspGly-390
429-PheProAsnLysGluLeuLeuLysGlnArgLeuSer-440
444-TrpProGluSerGlyArgHisValPheAspSerSerThrVal-457
472-MetThrGluProSerAlaGly-478
481-ValIleThrAspAspAsnMet-487
489-ValGluTyrLysTyrGlyArgGlyIle-497

Hydrophilic Regions - Hopp-Woods

131-GlyThrAspGlyAsnLysSerGlyArgGlnVal-141
222-IleAlaAspArgProAspArgLeuIleGluAsnLysHis-234
241-HisArgAspGlyAspLysValVal-248
278-LeuLysSerGlyIleArg-283
321-IleAlaAspGluProGln-326
331-LeuGlnAspLysArgValGluIleValLeuAspAspGlyArgLysTrpLeuArgArgHisProAspGluLysPheAsp-356
430-ProAsnLysGluLeuLeuLysGlnArgLeuSer-440
446-GluSerGlyArgHisValPhe-452
473-ThrGluProSerAlaGly-478
481-ValIleThrAspAspAsnMet-487

a501**AMPHI Regions - AMPHI**

63-ValGluValLeuGlnGluLeuPheArgGlnTyrArgValAlaArgGlnLeu-79

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88-ValPheAlaAlaPheGlnAlaVal-95

97-PheGlnGlyPheAspAsnGlyPhe-104

126-AlaAspAlaPheGlnGly-131

139-ValPheGluValValGlyAspIleThrArgArgThrThrGluAla-153

183-AspGlyPheThrArgIleAsnArgCysGlyGlnCys-194

196-HisAlaPheGlyAspPheIleAsp-203

252-AlaPheAlaGlyGlnVal-257

270-HisHisAspPheTyrArgCysPheArgHisValValGlnSerAsnIleGlyAsnLeu-288

306-TyrGlyAsnPheLeuThrValPheGlnGlnPheGlyCys-318

364-GlyAsnGlnTyrValAlaGlyPhe-371

438-AlaSerProPheAsp-442

458-ArgGlnLeuGlyAspPhe-463

511-PheGlnArgGlyPheGluHisIleGlu-519

528-TyrAspValPheAlaGln-533

Antigenic Index - Jameson-Wolf

6-LeuThrAlaAspAla-10

17-AlaAlaGlyGlyAspGlyLysVal-24

26-HisHisPheAspGly-30

46-ValGluThrGluGlyGln-51

56-ValArgAlaAspGlyGluAlaValGluVal-65

100-PheAspAsnGlyPhe-104

108-GlnSerAlaAspGluArgAsnHisAspPheAsnValGlyGln-121

144-GlyAspIleThrArgArgThrThrGluAlaGlnHis-155

179-GlyHisThrAspAspGlyPheThrArgIleAsnArgCysGlyGlnCys-194

202-IleAspValGluValAspArgGlyArgValThrGlyAspThrAlaGlyAsnPhe-219

230-GlnGlnGlyPheGlyValAspThrAspLeuAlaValAspAspLysPheHisThrArgGlnAlaAsp-251

257-ValGlyGluAlaGluCysGluPheGly-265

269-ValHisHisAspPheTyrArgCys-276

294-GlyValAspGluAlaGly-299

320-AlaAlaAlaAspAsnGlyArgAsnThrGlnPheAlaArgAspAspGlyGlyValAlaGlyThrSerAlaPro

ValGlyHisAspGlyGlySer-350

405-ValAspArgLysAlaAla-410

420-PheAspGlyPheGlyThrGlyLeuGlnAsp-429

439-SerProPheAspValHisArg-445

477-AspIleAspValGlyTyr-482

490-ValGlyLysAsnHisPheAsp-496

502-PheAlaGlnAspGlyArgPhe-508

512-GlnArgGlyPheGluHis-517

535-ValGlySerAspLysAspAspLeuVal-543

548-GlyIleGluGlyGluHisHisThr-555

Hydrophilic Regions - Hopp-Woods

6-LeuThrAlaAspAla-10

19-GlyGlyAspGlyLysVal-24

46-ValGluThrGluGlyGln-51

56-ValArgAlaAspGlyGluAlaValGluVal-65

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108-GlnSerAlaAspGluArgAsnHisAsp-116
 144-GlyAspIleThrArgArgThrThrGluAlaGlnHis-155
 179-GlyHisThrAspAspGlyPheThrArgIleAsnArg-190

202-IleAspValGluValAspArgGlyArgValThrGlyAspThr-215

237-ThrAspLeuAlaValAspAspLysPheHisThrArgGlnAlaAsp-251
 257-ValGlyGluAlaGluCysGluPheGly-265
 294-GlyValAspGluAlaGly-299
 323-AspAsnGlyArgAsnThrGlnPheAlaArgAspAspGlyGlyVal-337
 344-ValGlyHisAspGly-348
 405-ValAspArgLysAlaAla-410
 535-ValGlySerAspLysAspAspLeuVal-543
 549-IleGluGlyGluHisHisThr-555

a502-1**AMPHI Regions - AMPHI**

6-AsnLeuPheGlnPheLeuAlaVal-13
 26-GlyAlaValAspAlaLeuLysGlnPheAsnAsnAspAlaAspGlyIleSerGlySerPheThrGln-47
 98-GlnValThrLysSerSerGlnAsp-105

Antigenic Index - Jameson-Wolf

32-LysGlnPheAsnAsnAspAlaAspGlyIleSerGlySer-44
 48-ThrValGlnSerLysLysLysThrGlnThrAlaHisGlyThr-61
 74-TyrThrSerProTyrLysGlnThrIle-82
 98-GlnValThrLysSerSerGlnAspGlnAlaIleGlyGlySerPro-112
 116-LeuSerAsnLysThrAlaLeuGluSerSerTyrThrLeuLysGluAspGlySerSerAsnGly-136
 142-AlaThrProLysArgAsnAsnAlaGly-150
 158-PheLysGlyGlyAsn-162
 167-GlnLeuLysAspSerPheGlyAsnGlnThr-176
 184-AsnThrAsnProGlnLeuSerArgGlyAlaPhe-194
 196-PheThrProProLysGlyValAspVal-204

Hydrophilic Regions - Hopp-Woods

34-PheAsnAsnAspAlaAspGlyIle-41
 49-ValGlnSerLysLysLysThrGlnThr-57
 100-ThrLysSerSerGlnAspGlnAlaIle-108
 126-TyrThrLeuLysGluAspGlySerSerAsn-135
 143-ThrProLysArgAsnAsnAla-149
 167-GlnLeuLysAspSerPheGly-173

a503-1**AMPHI Regions - AMPHI**

6-TyrArgGluAlaAsnThrTrp-12
 96-SerSerThrSerAsnPheAlaSerAlaAlaGluMetArgSerLeu-110

Antigenic Index - Jameson-Wolf

4-SerLeuTyrArgGluAlaAsnThr-11
 26-ArgLysValSerCys-30
 32-ProAlaAsnAspAlaSerGlyArgSerSerAlaValAlaGluGluArgThrAlaThrGluMetSerAlaProP
 roAla-57
 69-SerAlaSerSerCysSerGlyLysGlyValSer-79
 87-LeuProThrArgAlaSerSerAlaThrSerSerThrSerAsn-100
 105-AlaGluMetArgSerLeuArg-111
 113-LeuCysAlaArgAsnAlaArg-119

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Hydrophilic Regions - Hopp-Woods

4-SerLeuTyrArgGlu-8
 35-AspAlaSerGlyArgSerSerAlaValAlaGluGluArgThrAlaThrGluMetSerAla-54
 73-CysSerGlyLysGlyValSer-79
 89-ThrArgAlaSerSer-93
 105-AlaGluMetArgSerLeuArg-111

a505**AMPHI Regions - AMPHI**

20-LeuThrAlaLeuLeuLysCysLeuSerLeuLeuProLeuSerCysLeu-35
 37-ThrLeuGlyAsnArg-41
 89-ProAlaPhePheArgLysProGluAspIleGluThrMetPheLysAlaValHisGlyTrpGluHisValGlnGlnAlaLeuAsp-116
 148-AlaMetTyrLysProProLysIleLysAlaIleAspLysIleMetGlnAlaGly-165
 178-IleGlnGlyValLysGlnIleIleLysAlaLeuArg-189
 210-GlyValTrpValAspPhePheGlyLysPro-219

Antigenic Index - Jameson-Wolf

38-LeuGlyAsnArgLeuGly-43
 50-LeuLysGluAspArgAlaArgIle-57
 62-ArgGlnAlaGlyMetAsnProAspProLysThrVal-73
 79-GluThrAlaLysGlyGlyLeu-85
 92-PheArgLysProGluAspIleGluThr-100
 114-AlaLeuAspLysHisGlu-119
 129-GlySerTyrAspLeuGlyGlyArgTyrIleSer-139
 142-LeuProPheProLeu-146
 150-TyrLysProProLysIleLysAlaIleAspLysIleMetGln-163
 165-GlyArgValArgGlyLysGlyLysThrAlaProThrSer-177
 183-GlnIleIleLysAlaLeuArgSerGlyGluAlaThr-194
 198-ProAspHisValProSerProGlnGluGlyGlyGluGlyVal-211
 242-CysGluArgLeuProGlyGlyGlnGly-250
 257-ProValGlnGlyGluLeuAsnGlyAspLysAlaHisAsp-269
 292-TyrAsnArgTyrLysMetPro-298

Hydrophilic Regions - Hopp-Woods

50-LeuLysGluAspArgAlaArgIle-57
 62-ArgGlnAlaGlyMetAsnProAspProLysThrVal-73
 79-GluThrAlaLysGlyGlyLeu-85
 92-PheArgLysProGluAspIleGluThr-100
 114-AlaLeuAspLysHisGlu-119
 151-LysProProLysIleLysAlaIleAspLysIleMetGln-163
 165-GlyArgValArgGlyLysGlyLysThrAlaPro-175
 183-GlnIleIleLysAlaLeuArgSerGlyGlu-192
 201-ValProSerProGlnGluGlyGlyGlu-209
 258-ValGlnGlyGluLeuAsnGlyAspLysAlaHisAsp-269

a506**AMPHI Regions - AMPHI**

6-GluValGlyArgValAlaHisCysGlyGlyGlyVal-17
 25-ArgValValHisGlnValGluGlnGlyAlaArg-35
 53-AlaValAspPheGlnArgArgPhe-60
 99-AlaThrArgThrValAspArgAspLeuAlaGluVal-110
 138-GlyAsnGluValAlaArgCys-144
 180-GlnValLysArgMetIleArgHisPhePheArg-190
 199-ValHisArgProPheArgLysLeuAlaAlaLeuAspGlyPheValGlnVal-215
 224-GlyAspAspPheGlyGlyPhePheValGlyGlnValPheAsnAlaLeuLeu-240
 313-PheValGlnValGlyGluLeuThrArgValAlaGlnGluGlu-326

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372-GlyPhePheAlaAspPheAlaGluAspPheGlyAlaGlyValPheGlyAspValValArgTyrGlyLysArg
Thr-396
408-PheGlyAspAspPheAlaHisGluValGlyGlu-418
427-ArgGlnGlnArgAlaAlaArgThr-434

Antigenic Index - Jameson-Wolf

13-CysGlyGlyGlyValAla-18
31-GluGlnGlyAlaArgLeu-36
48-ProValArgArgValAlaValAspPheGlnArgArgPheGlyGluVal-63
98-ArgAlaThrArgThrValAspArgAspLeuAlaGlu-109
134-GlyAlaAspThrGlyAsnGluValAlaArgCysGluGly-146
176-ProAsnPheGlyGlnValLysArgMetIle-185
192-GlyPheArgHisAspLeuAspValHisArgProPheArgLys-205
223-ValGlyAspAspPheGlyGly-229
244-MetGluPheHisProLysThr-250
259-ValGlyMetArgThrGluAla-265
289-GlyGlnGlnArgProGluValProVal-297
318-GluLeuThrArgValAlaGlnGluGluHisGlyArgValValAla-332
343-GluLeuGlnArgLysThrAlaAsp-350
362-CysHisGlyGlyGluThrGlyGlu-369
377-PheAlaGluAspPheGly-382
389-ValValArgTyrGlyLysArgThrGluArgAlaArgThr-401
408-PheGlyAspAspPheAlaHisGluVal-416
424-GlnIleLeuArgGlnGlnArgAlaAlaArgThrGlyGlyGln-437
442-ValGlyAsnArgArgAlaVal-448
458-PheGlyGlyXxxHisArgSerCysSer-466
471-GlyGlnXxxGlyGlyLysArgLeuThrValArgPheGlyGlyLysArgIleArgAsnArgPheLeuAspCys
AsnLysPheLeuGlu-499
510-MetAspAlaThrIleArgGlnAspPheArgTyr-520

Hydrophilic Regions - Hopp-Woods

31-GluGlnGlyAlaArgLeu-36
48-ProValArgArgValAlaValAspPheGlnArgArgPheGlyGlu-62
98-ArgAlaThrArgThrValAspArgAspLeuAlaGlu-109
136-AspThrGlyAsnGluValAlaArgCysGluGly-146
180-GlnValLysArgMetIle-185
195-HisAspLeuAspVal-199
201-ArgProPheArgLys-205
223-ValGlyAspAspPhe-227
244-MetGluPheHisPro-248
259-ValGlyMetArgThrGluAla-265
291-GlnArgProGluVal-295
318-GluLeuThrArgValAlaGlnGluGluHisGlyArgValValAla-332
343-GluLeuGlnArgLysThrAlaAsp-350
364-GlyGlyGluThrGlyGlu-369
377-PheAlaGluAspPheGly-382
390-ValArgTyrGlyLysArgThrGluArgAlaArgThr-401
408-PheGlyAspAspPheAlaHisGluVal-416
425-IleLeuArgGlnGlnArgAlaAlaArgThrGlyGly-436
443-GlyAsnArgArgAlaVal-448
473-XxxGlyGlyLysArgLeuThr-479
482-PheGlyGlyLysArgIleArgAsnArgPheLeuAsp-493
510-MetAspAlaThrIleArgGlnAspPheArgTyr-520

a513**AMPHI Regions** - AMPHI

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6-ThrGluTrpLeuHisGlyTrpValGlyAlaIleAsnAspProMetTrp-21
 23-TyrLeuValTyrXxxLeu-28
 48-GlyArgSerIleLysGlu-53
 66-GlyIleThrProPheGlnAlaPheValThrGlyLeuAla-78
 119-SerSerLeuAlaGlnLeuPheLysValArgAsp-129
 146-GlyLeuGlyGlnLysTrpLeuGlyVal-154
 176-IleAlaAspThrVal-180
 205-GlyGlyIleArgArgIleSerLysAlaAla-214
 243-ValPheGlyGlnIlePheSer-249
 259-GlyGlyLeuLeuGlyGlyLeuIle-266
 288-AlaProAsnAlaAlaAlaAlaAla-295
 303-GlnGlyMetIleGlnMetLeuGlyValPheValAsp-314
 332-ProTyrGlyAspLeu-336
 347-ValSerGlnValGlyGlnTrp-353
 391-ThrAlaValPheArgMet-396
 403-TyrPheGlyAlaValAla-408
 423-IleMetAlaTrpIleAsnLeuValAlaIleLeuLeuLeuSer-436

Antigenic Index - Jameson-Wolf

1-MetAsnGluAsnPhe-5
 48-GlyArgSerIleLysGluMetLeuGlyGlyArgLysGlnGlyAspAspProHisGly-66
 126-LysValArgAspTyrAspAsnHisHisPheArgGlyGlyProAla-140
 208-ArgArgIleSerLysAlaAlaGlu-215
 273-GlyIleLysArgGlyLeuTyrSerAsnGluAlaGlyMetGlySerAlaProAsnAla-291
 295-AlaGluValLysHisProVal-301
 331-GlnProTyrGlyAspLeuSerGly
 375-AlaTyrAlaGluSerAsnVal-381
 444-ArgAspTyrThrAlaLysLeuLysMetGlyLysAspProGluPheLysLeuSerGluHisProGlyLeuLys
 ArgArgIleLysSerAspValTrp-475

Hydrophilic Regions - Hopp-Woods

48-GlyArgSerIleLysGluMetLeuGlyGlyArgLysGlnGlyAspAspProHisGly-66
 126-LysValArgAspTyrAspAsnHisHis-134
 208-ArgArgIleSerLysAlaAlaGlu-215
 273-GlyIleLysArgGlyLeuTyr-279
 295-AlaGluValLysHis-299
 450-LeuLysMetGlyLysAspProGluPheLysLeuSerGlu-462
 464-ProGlyLeuLysArgArgIleLysSer-472

a515-1**AMPHI Regions - AMPHI**

8-ArgAlaAlaGlyValAlaArgGlyLeuHisSerGluPheAlaArg-22
 59-AspValArgPhePheAlaGlnValGluGluIleGlyGlnAspPhePheAlaAspAla-77
 90-AlaGlyGluCysAlaAspGluValSerAspLysThr-101
 122-GluSerAlaGlnSerAlaAlaGlyGlyGlyLeuThrAspGlyPheGly-137
 176-CysGlyLysThrValGlyVal-182
 198-GlyValPheAspAla-202
 233-ValAlaAspValLeuArg-238
 251-PheGlyGlyValAlaGlyAspValGlyGlyGlyAlaAspGlyValAlaGlnGlyLeuPheGlyGluIleGly
 GlyAla-276

Antigenic Index - Jameson-Wolf

24-ValThrAlaGluGluIleAlaPhe-31
 38-HisGluAlaArgCysGlyGlyAsn-45
 51-IleAlaAlaAlaGluArgAlaGlyAsp-59
 67-GluGluIleGlyGln-71

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77-AlaValAspGlnGluThr-82
 84-LeuAlaValGluArgSerAlaGlyGluCysAlaAspGluValSerAspLysThrAlaArgAsnGlyGlyIleGluGluAspGlyValValAlaCysArgAspAlaAlaAlaGluSerAlaGln-125
 128-AlaGlyGlyGlyLeuThrAspGly-135
 160-GlyGlyAsnAspAlaAlaGlyAsn-167
 192-LeuHisArgArgAla-196
 217-AlaAspGlyGlyPheArg-222
 242-GlyValGlyLysSerGlyAla-248
 257-AspValGlyGlyGlyAlaAspGlyVal-265
 284-AspValAsnGlyAsnValGln-290

Hydrophilic Regions - Hopp-Woods

24-ValThrAlaGluGluIleAlaPhe-31
 38-HisGluAlaArgCysGly-43
 51-IleAlaAlaAlaGluArgAlaGlyAsp-59
 77-AlaValAspGlnGluThr-82
 84-LeuAlaValGluArgSerAlaGlyGluCysAlaAspGluValSerAspLysThrAlaArgAsnGlyGlyIleGluGluAspGlyValValAlaCysArgAspAlaAlaAlaGluSerAlaGln-125
 162-AsnAspAlaAlaGly-166
 192-LeuHisArgArgAla-196
 258-ValGlyGlyGlyAlaAspGlyVal-265

a519-1**AMPHI Regions - AMPHI**

29-ValValGluArgLeuGlyArgPheHisArgAlaLeuThrAlaGly-43
 105-MetAlaIleThrGlnLeuAlaGlnThrThrLeuArgSerVal-118
 139-ValSerAlaLeuAspGluAlaAla-146
 166-GluIleLeuArgSerMetGlnAla-173
 192-LysIleGluGlnIle-196
 221-SerAsnAlaGluLysIleAlaArgIleAsn-230
 249-AlaIleArgGlnIleAlaAlaAla-256
 273-GlnTyrValAlaAlaPheAsnAsnLeuAlaLys-283
 292-AlaAsnValAlaAspIleGlySerLeuIleSerAlaGlyMetLysIleIleAspSerSerLysThrAla-314

Antigenic Index - Jameson-Wolf

31-GluArgLeuGlyArgPheHisArg-38
 58-HisSerLeuLysGluIleProLeuAspValProSerGln-70
 72-CysIleThrArgAspAsnThrGlnLeuThrVal-82
 91-ThrAspProLysLeuAlaSer-97
 122-MetGluLeuAspLysThrPheGluGluArgAspGluIleAsn-135
 141-AlaLeuAspGluAlaAlaGly-147
 154-LeuArgTyrGluIleLysAspLeuValPro-163
 175-IleThrAlaGluArgGluLysArgAlaArgIleAlaGluSerGluGlyArgLysIleGluGln-195
 197-AsnLeuAlaSerGlyGlnArgGluAlaGluIleGlnGlnSerGluGlyGluAlaGlnAla-216
 219-AsnAlaSerAsnAlaGluLysIleAlaArgIleAsnArgAlaLysGlyGluAlaGluSerLeuArgLeu-241
 245-AlaAsnAlaGluAlaIleArg-251
 258-GlnThrGlnGlyGlyAlaAspAlaValAsn-267
 281-LeuAlaLysGluSerAsnThr-287
 303-AlaGlyMetLysIleIleAspSerSerLysThrAlaLys-315

Hydrophilic Regions - Hopp-Woods

31-GluArgLeuGlyArgPheHisArg-38
 58-HisSerLeuLysGluIleProLeu-65
 73-IleThrArgAspAsnThr-78

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91-ThrAspProLysLeu-95
 122-MetGluLeuAspLysThrPheGluGluArgAspGluIleAsn-135
 141-AlaLeuAspGluAlaAla-146
 154-LeuArgTyrGluIleLysAspLeuValPro-163
 175-IleThrAlaGluArgGluLysArgAlaArgIleAlaGluSerGluGlyArgLysIleGluGln-195
 200-SerGlyGlnArgGluAlaGluIleGlnGlnSerGluGlyGluAlaGlnAla-216
 221-SerAsnAlaGluLysIleAlaArgIleAsnArgAlaLysGlyGluAlaGluSerLeuArgLeu-241
 245-AlaAsnAlaGluAlaIleArg-251
 281-LeuAlaLysGluSerAsn-286
 306-LysIleIleAspSerSerLysThrAlaLys-315

a520-1**AMPHI Regions - AMPHI**

104-LeuThrLysAlaAlaAspGlyGlnValCysArgAlaPheSerSerLeu-119

Antigenic Index - Jameson-Wolf

20-LysProSerArgArgAlaLeu-26
 47-AlaSerGlyLysIleSerLeuPro-54
 84-ProProAsnAsnSerThrThrThrSerThrSerSerArgAlaThrSerSerAsnGlySerLeuThrLysAlaAlaAspGlyGlnVal-112
 117-SerSerLeuLysSerHisThrAlaGluIleArgIleSerArgProLysArgArgGluIleSerSerAlaLeuSerArgAsnThrAlaAla-146
 150-ProThrValProLysProLysArgProMet-159
 166-SerProCysLysProThrGluMet-173

Hydrophilic Regions - Hopp-Woods

20-LysProSerArgArgAlaLeu-26
 93-ThrSerSerArgAlaThrSerSer-100
 103-SerLeuThrLysAlaAlaAsp-109
 120-LysSerHisThrAlaGluIleArgIleSerArgProLysArgArgGluIleSer-137
 140-LeuSerArgAsnThrAla-145
 151-ThrValProLysProLysArgProMet-159
 168-CysLysProThrGluMet-173

a521**AMPHI Regions - AMPHI**

86-ValLysThrValSerLysProAlaLys-94
 133-GlnAlaArgLeuAlaLysGlyGlyAsn-141
 147-IleAsnAlaLeuGlnSerValLeuAsp-155

Antigenic Index - Jameson-Wolf

1-MetLysSerLysLeu-5
 36-ValTyrThrThrLysProSerLysSerCysLeuSerThrAspLeuProProIle-53
 55-AsnTyrSerSerGluArgTyrIleProProGlnThrSerGluProThrProSerProSerAsnGlyGlyGln-78
 80-ValLysTyrLysAlaProVal-86
 88-ThrValSerLysProAlaLysSerAsnThrProProProGlnGlnAlaProSerAsnAsnSerArgArgSerIleLeuGluThrGluLeuSerAsnGluArgLysAlaLeuValGluAlaGlnLysMetLeuSer-132
 135-ArgLeuAlaLysGlyGlyAsnIleAsn-143
 153-ValLeuAspArgGlnGlnAsn-159
 163-LeuGlnArgGluLeuGlyArg-169

Hydrophilic Regions - Hopp-Woods

1-MetLysSerLysLeu-5
 40-LysProSerLysSerCysLeu-46
 57-SerSerGluArgTyrIle-62
 65-GlnThrSerGluProThrProSerProSerAsnGly-76

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80-ValLysTyrLysAlaProVal-86
 88-ThrValSerLysProAlaLysSerAsnThrProPro-99
 102-GlnAlaProSerAsnAsnSerArgSerIleLeuGluThrGluLeuSerAsnGluArgLysAlaLeuVal
 GluAlaGlnLysMetLeuSer-132
 153-ValLeuAspArgGlnGlnAsn-159
 163-LeuGlnArgGluLeuGlyArg-169

a522**AMPHI Regions - AMPHI**

57-LysIleValGluSerCysValLys-64
 96-MetTrpGluGlnProLeuAspArgLeuSerGluLysGlnIleSerSerPheGlyLysLeuGlyAlaGlnGluG
 lnLeuAspLeuLeuGlyGlyAla-127

Antigenic Index - Jameson-Wolf

1-MetThrGluProLysHisGluMetProThrGluGluGlnValAlaAlaArgLysLysAlaLysAlaLysIleAr
 gThr-26
 48-AlaMetSerLysProGlnAlaLysGlnLysIleValGluSerCysValLys-64
 71-LysTrpGlnAsnAspLeuArgAlaArgGlyLeuAspSerAsnAsnThrArgLeuThr-89
 99-GlnProLeuAspArgLeuSerGluLysGlnIleSerSerPheGlyLysLeuGlyAla-117
 128-AsnAlaPheGluThrArgAspLysGlnCysValAlaAspLeuLysSerGlu-144

Hydrophilic Regions - Hopp-Woods

1-MetThrGluProLysHisGluMetProThrGluGluGlnValAlaAlaArgLysLysAlaLysAlaLysIleAr
 gThr-26
 48-AlaMetSerLysProGlnAlaLysGlnLysIleValGluSerCysVal-63
 72-TrpGlnAsnAspLeuArgAlaArgGlyLeuAspSerAsnAsnThr-86
 100-ProLeuAspArgLeuSerGluLysGlnIle-109
 130-PheGluThrArgAspLysGlnCysValAlaAspLeuLysSerGlu-144

a525-1**AMPHI Regions - AMPHI**

59-GluPheAlaGluPheValAsnSerHisProGln-69
 86-LysHisTrpMetLysAsnGly-92
 125-ArgLeuProThrIleAspGluTrpGluPhe-134
 166-AspLeuHisAspValGly-171
 178-TrpGlyValTyrAsp-182
 188-TrpGluTrpThrGlu-192

Antigenic Index - Jameson-Wolf

24-ValGlnIleGluGlyGlySerTyrArgProLeuTyrLeuLysLysAspThrGlyLeuIleLys-44
 46-LysProPheLysLeuAspLysTyrProValThr-56
 67-HisProGlnTrpGlnLysGlyArgIleGlySerLysGlnAlaGlu-81
 88-TrpMetLysAsnGlySerArgSerTyrAlaProLysAlaGlyAspLeuLysGlnPro-106
 122-GlnGlyLysArgLeuProThrIleAspGluTrpGlu-133
 140-AlaThrGlnLysAsnGlySerAsnGluProGlyTyrAsnArgThr-154
 159-TyrAlaAspGlyAspArgLysAspLeuHisAspValGlyLysGlyArgProAsnTyr-177
 190-TrpThrGluAspPheAsnSerSerLeuLeuSerSerGlyAsnAla-204
 213-AlaSerIleGlySerSerAspSerSerAsnTyr-223
 234-SerLeuGlnSerLysTyr-239

Hydrophilic Regions - Hopp-Woods

35-TyrLeuLysLysAspThrGlyLeuIleLys-44
 46-LysProPheLysLeuAspLysTyrPro-54
 71-GlnLysGlyArgIleGlySerLysGlnAlaGlu-81
 91-AsnGlySerArgSerTyrAla-97
 99-LysAlaGlyAspLeuLysGln-105
 122-GlnGlyLysArgLeuProThr-128

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140-AlaThrGlnLysAsnGlySerAsnGluProGlyTyr-151
 160-AlaAspGlyAspArgLysAspLeuHisAspValGlyLysGlyArgPro-175
 216-GlySerSerAspSerSerAsn-222

a527**AMPHI Regions - AMPHI**

7-PhePheGlnProValGln-12
 28-SerAspAlaAlaGluLeuValGluLeuPheAlaLeuPhePro-41
 73-GlyLysGlyIleGluArgGlnValAspAsnIleAlaAspValTyrGlyPhe-89

Antigenic Index - Jameson-Wolf

26-GlyGlySerAspAlaAlaGlu-32
 52-GlnLysProArgLeuGlyCys-58
 71-PheIleGlyLysGlyIleGluArgGlnValAspAsnIleAla-84
 107-LeuLeuArgLysGlyThrGlyLeuGluLysThrCysArgProLysProPheValGlnProHisGlyGlyArg-130

Hydrophilic Regions - Hopp-Woods

27-GlySerAspAlaAlaGlu-32
 52-GlnLysProArgLeuGlyCys-58
 75-GlyIleGluArgGlnValAspAsnIleAla-84
 107-LeuLeuArgLysGlyThrGlyLeuGluLysThrCysArgProLysPro-122

a528**AMPHI Regions - AMPHI**

7-LysTyrThrAlaMetAlaAlaLeuLeuAlaPhe-17
 23-ArgLeuAlaGlyTrpTyrGluCysSerSerLeuSerGlyTrpCysLysProArgLysProAlaAlaIle-45
 69-AsnArgSerValArg-73
 86-TyrArgLysIleGlyLysPhe-92
 106-ProLeuIleGluThrPheLys-112

Antigenic Index - Jameson-Wolf

1-MetGluIleArgAla-5
 29-GluCysSerSerLeuSerGlyTrpCysLysProArgLysProAlaAla-44
 49-AspIleGlyGlyGluSerProProSerLeuGluAspTyrGluIleProLeuSerAspGlyAsnArgSerValArgAlaAsnGluTyrGluSerAlaGlnGlnSer-83
 88-LysIleGlyLysPheGluAlaCysGlyLeuAspTrpArgThrArgAspGlyLysProLeu-107
 110-ThrPheLysGlnGluGlyPheAspCysLeuLysLysGlnGlyLeuArgArgAsnGlyLeuSerGluArgValArgTrp-135

Hydrophilic Regions - Hopp-Woods

1-MetGluIleArgAla-5
 37-CysLysProArgLysProAlaAla-44
 51-GlyGlyGluSerProProSerLeuGluAspTyrGluIleProLeu-65
 67-AspGlyAsnArgSerValArgAlaAsnGluTyrGluSerAlaGln-81
 88-LysIleGlyLysPheGluAlaCys-95
 99-TrpArgThrArgAspGlyLysProLeu-107
 111-PheLysGlnGluGlyPheAspCysLeuLysLysGlnGlyLeuArgArgAsnGlyLeuSerGluArgValArgTrp-135

a529**AMPHI Regions - AMPHI**

11-LeuAlaLeuIleGlyLeuAlaAlaCysSer-20
 35-SerHisArgLeuIle-39
 49-AsnProAspGlnGlyAsnLeuTyrArgLeuProAla-60
 79-GlnGlnProAlaAspAlaGluValLeuLysSerValLysGlyValArg-94
 152-GlnAspSerLeuArgArgLeuPheAsp-160
 162-ValGlyLeuGlyGlyIleTyr-168

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196-AlaMetLysGluVal-200
 223-AlaPheLeuThrArgPheMetGlnTyrLeu-232
 252-AlaAsnGluMetAla-256
 270-GlyArgAsnTrpArg-274

Antigenic Index - Jameson-Wolf

19-CysSerGlySerLysThrGluGlnProLysLeuAspTyrGlnSerArgSerHisArgLeuIleLys-40
 42-GluValProProAspLeuAsnAsnProAspGlnGlyAsnLeuTyr-56
 60-AlaGlySerGlyAlaValArgAlaSerAspLeuGluLysArgArgThrProAlaVal-78
 80-GlnProAlaAspAlaGluValLeuLysSerValLysGlyValArgLeuGluArgAspGlySerGln-101
 105-ValValAspGlyLysSerHisAla-112
 123-GlnGluAsnGlyPheAspIleLysSerGluGluProAla-135
 139-MetGluThrGluTrpAlaGluAsnArgAlaLysIleProGlnAspSerLeuArgArgLeuPhe-159
 169-SerThrGlyGluArgAspLysPheIleValArgIleGluGlnGlyLysAsnGlyValSer-188
 195-LysAlaMetLysGluValTyrGlyGlyLysAspLysAspThrThr-209
 212-GlnProSerProSerAspProAsnLeu-220
 233-GlyValAspGlyGlnGlnAlaGluAsnAlaSerAlaLysLysProThrLeu-249
 253-AsnGluMetAlaArgIleGluGlyLysSer-262
 268-AspTyrGlyArgAsnTrpArgArgThrAlaLeuAla-279
 289-GlyGlnAsnThrGluArgHisAla-296
 300-GlnLysAlaProAsnGluSerAsnAlaValThrGluGlnLysProGlyLeu-316
 320-LeuLeuGlyLysGlyLysAlaGluLysProAlaGluGlnProGlu-334
 342-ValAlaAsnGlySerArg-347
 350-LeuLeuAsnLysAspGlySerAlaTyrAlaGlyLysAspAlaSer-364
 370-LeuHisSerGluLeuArg-375

Hydrophilic Regions - Hopp-Woods

20-SerGlySerLysThrGluGlnProLysLeuAspTyrGlnSerArgSerHisArgLeuIleLys-40
 42-GluValProProAspLeuAsnAsnProAspGln-52
 63-GlyAlaValArgAlaSerAspLeuGluLysArgArgThrProAla-77
 80-GlnProAlaAspAlaGluValLeuLysSerValLysGlyValArgLeuGluArgAspGlySerGln-101
 107-AspGlyLysSerHisAla-112
 125-AsnGlyPheAspIleLysSerGluGluProAla-135
 139-MetGluThrGluTrpAlaGluAsnArgAlaLysIleProGlnAspSerLeuArgArgLeuPhe-159
 170-ThrGlyGluArgAspLysPheIleVal-178
 180-IleGluGlnGlyLysAsnGlyVal-187
 195-LysAlaMetLysGluValTyrGlyGlyLysAspLysAspThrThr-209
 214-SerProSerAspProAsnLeu-220
 235-AspGlyGlnGlnAlaGluAsnAlaSerAlaLysLysProThr-248
 253-AsnGluMetAlaArgIleGluGlyLysSer-262
 269-TyrGlyArgAsnTrpArgArg-275
 291-AsnThrGluArgHis-295
 302-AlaProAsnGluSerAsnAlaValThrGluGlnLysProGlyLeu-316
 320-LeuLeuGlyLysGlyLysAlaGluLysProAlaGluGlnProGlu-334
 352-AsnLysAspGlySer-356
 359-AlaGlyLysAspAlaSer-364
 370-LeuHisSerGluLeuArg-375

a531**AMPHI Regions** - AMPHI

59-SerLeuAlaGlyIleLeuAlaAspTyrValAlaGlyIleTrpGlyThr-74
 90-GlySerIleIleGlyIlePhePheSerLeuProGlyLeuIleLeuGly-105
 108-IleGlyAlaAlaAlaGly-113
 131-ThrLeuLeuGlyLeuIleVal-137

Antigenic Index - Jameson-Wolf

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74-ThrLysTyrThrGlyAlaGlyLysLeuAlaVal-84

114-GluLeuIleGluArgArgAsnMet-121

Hydrophilic Regions - Hopp-Woods

114-GluLeuIleGluArgArgAsnMet-121

a532**AMPHI Regions - AMPHI**

6-GlyLysGlyAlaAsp-10

27-AlaLeuLeuSerAlaValThrHisLeuLeuAlaIlePheValProMetIleThr-44

76-TyrLeuGlnValAsnArgPheGlyPro-84

122-SerThrLeuLeuGly-126

147-LysValIleThrProThrVal-153

184-ThrPheGlySerMetGluAsnLeuGly-192

206-CysMetLysAsnPro-210

224-GlyTyrIleValAlaLeu-229

236-PheSerAlaLeuGlnAsnLeuPro-243

271-LeuSerValPheGluAlaValGlyAspLeuThrAla-282

297-ThrLysArgLeuArgGlyGlyVal-304

307-AspGlyLeuValSerValIleAlaThrAlaLeuGly-318

338-AlaSerArgHisValGlyLysTyr-345

361-ArgAlaPheThrThrIleProSerProVal-370

Antigenic Index - Jameson-Wolf

1-MetSerGlyGlnLeuGlyLysGlyAlaAspAlaPro-12

18-LeuGluAspArgProProPheGlyAsn-26

80-AsnArgPheGlyPro-84

108-AlaGlyMetLysGluGlyGlyLeuThrLysAspAlaMet-120

177-PheGlyAlaLysAlaAspGlyThrPheGlySer-187

207-MetLysAsnProLeuLeuArg-213

286-ValSerAspGlnProIleGluGlyGluGluTyrThrLysArgLeuArgGlyGlyValLeu-305

391-ValSerHisGlyIleArgArgArgGluAlaVal-401

445-LeuProGluAspLysThrGluAlaAlaValLysPheAspThrAspHisLeuGluHis-463

Hydrophilic Regions - Hopp-Woods

4-GlnLeuGlyLysGlyAlaAspAlaPro-12

18-LeuGluAspArgProProPhe-24

109-GlyMetLysGluGlyGlyLeuThrLysAspAlaMet-120

179-AlaLysAlaAspGly-183

289-GlnProIleGluGlyGluGluTyrThrLysArgLeuArgGly-302

394-GlyIleArgArgArgGluAlaVal-401

445-LeuProGluAspLysThrGluAlaAlaValLysPheAspThrAspHisLeuGluHis-463

a537**AMPHI Regions - AMPHI**

38-GlnIleArgAspGlyGlyAspAlaLeuHisTyrLeuAsnArgIle-52

86-HisGlyGluHisHis-90

109-GlyTyrLeuTyrAsnGlyValHisGlu-117

138-ArgGlnValAspGlyLeuMetSerAlaIleTyr-148

182-ArgPheGluArgHisCys-187

194-ProGluAlaGlyArgLysTyrTyrArgAsnAla-204

281-ArgProValArgValLeuThrAlaGly-289

315-TyrThrAlaValPheAspTyrValArgAsnGlyArgArgAla-328

Antigenic Index - Jameson-Wolf

21-ThrGlnAsnGlnSerLeuProAlaGly-29

32-ValTyrProSerAlaProGlnIleArgAspGlyGlyAspAla-45

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69-AsnSerAlaArgArgHisAlaArg-76
 80-LeuAsnProGluAspGlyHisGlyGluHisHisProAspAsnProHis-95
 99-GlnLysLeuThrGluArgThrArgLeu-107
 115-ValHisGluAsnIleSerThrGluGluGluAlaAlaGluSerSerAspSerAspIleArgThrGlnGlnArg
 GlnValAspGlyLeu-143
 152-SerLeuLeuAspArgHisThrAspGluAlaGly-162
 165-PheValArgGluAsnGlyLysThr-172
 178-GlnGlyAsnGlyArgPheGluArgHisCysAlaGlnGlyArgAsnGlnProGluAlaGlyArgLysTyrTyr
 ArgAsnAlaCysHisAsnGly-208
 212-TyrThrAspGluAlaMetPro-218
 237-PheHisGlyGluArgProAspProValProGluTyrGluIleThrGlyAsnProAlaSer-256
 258-AspPheSerGluAlaAlaGly-264
 266-IleThrMetLysSer-270
 274-TyrGlnGlyLysAsnGluIleArgPro-282
 287-ThrAlaGlyAsnAspProAsnGlyArgLeuThr-297
 320-AspTyrValArgAsnGlyArgArgAlaGlnAla-330
 334-PheArgThrArgLysProAspTyrProTyr-343
 345-GluValAsnGlyGlyGluThrLeuAlaValArgLysGlyGluLys-359
 364-TrpArgGlyArgTrpCysLeu-370
 376-TyrThrTyrArgGlnArgProGlySerArgLeuSerIleGlyArgHisLysAlaGlyGly-395
 401-AspGlyMetAlaGlySer-406
 408-IleThrLeuAlaProGluGlyGluThrGluArgGly-419

Hydrophilic Regions - Hopp-Woods

37-ProGlnIleArgAspGlyGlyAsp-44
 69-AsnSerAlaArgArgHisAlaArg-76
 81-AsnProGluAspGlyHisGlyGluHisHisProAsp-92
 100-LysLeuThrGluArgThrArgLeu-107
 119-IleSerThrGluGluGluAlaAlaGluSerSerAspSerAspIleArgThrGlnGlnArgGlnValAsp-14
 1
 152-SerLeuLeuAspArgHisThrAspGluAlaGly-162
 165-PheValArgGluAsnGlyLys-171
 179-GlyAsnGlyArgPheGluArgHisCysAlaGlnGlyArgAsnGlnProGluAlaGlyArgLysTyrTyrArg
 -202
 238-HisGlyGluArgProAspProValProGlu-247
 258-AspPheSerGluAlaAlaGly-264
 266-IleThrMetLysSer-270
 275-GlnGlyLysAsnGluIleArgPro-282
 289-GlyAsnAspProAsnGlyArg-295
 323-ArgAsnGlyArgArgAlaGlnAla-330
 334-PheArgThrArgLysProAsp-340
 352-LeuAlaValArgLysGlyGluLys-359
 377-ThrTyrArgGlnArgProGlySer-384
 387-SerIleGlyArgHisLysAla-393
 412-ProGluGlyGluThrGluArgGly-419

a538**AMPHI Regions - AMPHI**

42-ThrAlaLeuAlaGluAlaValGluLeuValLysAlaAlaGly-55
 79-LysAlaAlaGluLeuSerGluAlaValAla-88
 105-GlnGluArgAsnLeuGluLysIleLeuGlnCysArgValLeuAspArgVal-121
 145-GlnLeuSerHisLeuAlaGlyArgLeuIleArgGlyTyrGlyHisLeuGln-161
 188-IleAsnAlaLeuLysLysGlnLeuAla-196
 211-SerGlyThrIleLysThrPheAlaLeuValGlyTyrThrAsn-224
 231-PheAsnArgLeuThrLys-236
 271-GlyPheValSerAspLeuProHisLysLeuIleSerAlaPheSerAlaThrLeuGlu-289

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307-AsnSerGlyGlnGlnIleGluAspValGluAsnValLeuGlnGluIleHis-323
 365-GluAsnThrGlyIleAspAlaLeuArgGluAlaIleAlaGluTyrCysAla-381

Antigenic Index - Jameson-Wolf

1-MetThrGlyArgThrGlyArgAsnGlySerThrGlnAlaGlnProGluArgVal-18
 24-MetLeuAspLysAspGlyThrGlySerSerAlaThrArgLeuAsnGly-39
 48-ValGluLeuValLys-52
 54-AlaGlyGlyAspSerValArgValGluThrAlaLysArgAspArgProHisThr-71
 77-ThrGlyLysAlaAlaGluLeuSerGlu-85
 100-GluLeuThrProThrGlnGluArgAsnLeuGluLys-111
 129-AlaArgArgAlaArgThrGlnGluGlyArgLeuGlnVal-141
 161-GlnSerGlnArgGlyGlyIleGlyMetLysGlyProGlyGluThrLysLeuGluThrAspArgArgLeuIle-184
 189-AsnAlaLeuLysLysGlnLeuAlaAsnLeuLysLysGlnArgAlaLeuArgArgLysSerArgGluSerGlyThrIleLysThr-216
 224-AsnValGlyLysSerSerLeu-230
 233-ArgLeuThrLysSerGlyIleTyrAla-241
 257-TyrIleSerProGluCys-262
 287-ThrLeuGluGluThrAlaGln-293
 304-AlaAlaProAsnSerGlyGlnGlnIleGluAspValGluAsnValLeu-319
 323-HisAlaGlyAspIlePro-328
 333-TyrAsnLysThrAspLeuLeuProSerGluGluGlnAsnThrGlyIle-348
 365-GluAsnThrGlyIleAspAlaLeuArgGluAlaIle-376
 381-AlaAlaAlaProAsnThrAspGluThrGluMetPro-392

Hydrophilic Regions - Hopp-Woods

1-MetThrGlyArgThrGlyArgAsnGlySerThr-11
 13-AlaGlnProGluArg-17
 25-LeuAspLysAspGlyThrGly-31
 48-ValGluLeuValLys-52
 54-AlaGlyGlyAspSerValArgValGluThrAlaLysArgAspArgProHis-70
 78-GlyLysAlaAlaGluLeuSerGlu-85
 101-LeuThrProThrGlnGluArgAsnLeuGluLys-111
 129-AlaArgArgAlaArgThrGlnGluGlyArgLeuGlnVal-141
 161-GlnSerGlnArgGlyGlyIle-167
 171-GlyProGlyGluThrLysLeuGluThrAspArgArgLeuIle-184
 189-AsnAlaLeuLysLysGlnLeuAlaAsnLeuLysLysGlnArgAlaLeuArgArgLysSerArgGluSerGlyThr-213
 287-ThrLeuGluGluThrAlaGln-293
 310-GlnGlnIleGluAspValGluAsnValLeu-319
 337-AspLeuLeuProSerGluGluGlnAsn-345
 370-AspAlaLeuArgGluAlaIle-376
 384-ProAsnThrAspGluThrGluMetPro-392

a539-2**AMPHI Regions - AMPHI**

18-ArgGlnArgGluHisHisArgLeu-25
 44-LeuValGlyGlyPheAspPheLeuArgValIleGlyCysGlyGlyValAlaTyrLeuProAspPheGlnGln-67

Antigenic Index - Jameson-Wolf

1-MetGluAspLeuGlnGluIleGly-8
 15-LysValGlyArgGlnArgGluHisHisArgLeuHisHisProGlnProGlyAsnGlyGluAlaAspAsp-37
 63-ProAspPheGlnGlnAsnValGlyLysAlaAsp-73
 77-ValProAspAspAlaAlaAla-83
 88-IleGluValAspAlaAspAspAlaValCys-97

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102-LeuPheAspGlnProAspAlaGlyGlyAlaGlyAspAlaAlaGluHis-117

Hydrophilic Regions - Hopp-Woods

1-MetGluAspLeuGlnGluIleGly-8
 15-LysValGlyArgGlnArgGluHisHisArg-24
 31-GlyAsnGlyGluAlaAspAsp-37
 69-ValGlyLysAlaAsp-73
 78-ProAspAspAlaAlaAla-83
 88-IleGluValAspAlaAspAlaValCys-97
 102-LeuPheAspGlnProAspAlaGlyGlyAlaGlyAspAlaAlaGluHis-117

a542**AMPHI Regions** - AMPHI

6-ArgIleArgArgCysSerVal-12

Antigenic Index - Jameson-Wolf

1-MetProLysTrpSerArgIleArgArgCysSerVal-12
 20-SerAlaSerArgLeuThrCys-26
 36-MetArgLeuLysSerSerAspGlyIleAlaSer-46
 55-GlyProMetProSerGluThrValSerHisLysSerAspSerSerArgAsnThrSerAlaSerArgArgAsnValSerProLysCysProPhe-85
 89-PheArgGlnAspAlaAlaLysProArgArgPheGlyGlyLys-102
 106-LeuThrGlySerArg-110

Hydrophilic Regions - Hopp-Woods

5-SerArgIleArgArgCysSer-11
 36-MetArgLeuLysSerSerAspGlyIleAla-45
 57-MetProSerGluThrValSerHisLysSerAspSerSerArgAsnThrSerAlaSerArgArgAsnValSerPro-81
 89-PheArgGlnAspAlaAlaLysProArgArgPheGlyGly-101

a544-2**AMPHI Regions** - AMPHI

11-AlaLeuIleGlyIleLeu-16
 55-PheTrpPheProSerCysProGlyCysValSerGluMetProLysIleIleLysThrAla-74
 85-LeuAlaValAlaGlnProIleAspProIleGluSerValArgGlnTyrVal-101
 116-LysAlaValGlyGlnAlaPhe-122

Antigenic Index - Jameson-Wolf

1-MetLysLysIleLeu-5
 22-IleProAspSerLysThrAlaPro-29
 35-AspLeuHisGlyLysThrValSerAsnAlaAspLeuGlnGly-48
 59-SerCysProGlyCys-63
 66-GluMetProLysIleIleLysThrAlaAsnAspTyrLysAsnLysAsnPhe-82
 90-ProIleAspProIleGluSerValArgGlnTyrValLysAspTyrGly-105
 113-AspAlaAspLysAlaVal-118
 133-IleGlyLysLysGlyGluIleLeu-140
 144-ValGlyGluProAspPheGlyLysLeuTyrGlnGluIleAspThr-158

Hydrophilic Regions - Hopp-Woods

1-MetLysLysIleLeu-5
 23-ProAspSerLysThr-27
 66-GluMetProLysIleIleLysThrAlaAsnAspTyrLysAsnLysAsn-81
 92-AspProIleGluSerValArgGlnTyrValLys-102
 113-AspAlaAspLysAlaVal-118
 133-IleGlyLysLysGlyGluIle-139

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AMPHI Regions - AMPHI

7-PheAsnLysThrValAlaSerPheAlaGlnIleValGluThrPheAspVal-23
 62-AsnArgSerPheLys-66
 105-LeuHisIlePheThrAsnIleLys-112

Antigenic Index - Jameson-Wolf

3-ValAspAsnGlyPheAsnLysThrVal-11
 35-GlnMetLysGlnArgCysGlyTrp-42
 53-PheProArgCysGlyPheGluIleProAsnArgSerPheLysGlu-67
 76-LeuSerGluArgPheArgThrAsnAlaGluValGluIle-88

Hydrophilic Regions - Hopp-Woods

36-MetLysGlnArgCys-40
 60-IleProAsnArgSerPheLysGlu-67
 76-LeuSerGluArgPheArgThrAsnAlaGluValGluIle-88

a548**AMPHI Regions - AMPHI**

14-ValLeuAlaAlaLeuAlaAlaCysLys-22
 39-SerAlaAlaGluAsnAlaAlaLysPro-47
 89-PheThrHisCysProAspValCysProThr-98
 103-TyrSerAspThrLeuLysGlnLeuGlyGlyGln-113
 132-GluIleIleGlyLysTyrAlaLys-139

Antigenic Index - Jameson-Wolf

21-CysLysProGlnAspAsnSerAlaAla-29
 39-SerAlaAlaGluAsnAlaAlaLysProGlnThrArgGlyThrAspMetArgLysGluAspIleGlyGlyAspPheThrLeuThrAspGlyGluGlyLysProPheAsn-74
 76-SerAspLeuLysGly-80
 91-HisCysProAspValCysPro-97
 104-SerAspThrLeuLysGlnLeuGlyGlyGlnAlaLysAspValLys-118
 124-IleAspProGluArgAspThrProGluIleIleGlyLysTyrAlaLysGlnPheAsnProAspPhe-145
 150-AlaThrGlyAspGlnAsnLeu-156
 169-LysValAsnGlnLysAspAspSerGluAsnTyrLeu-180
 189-LeuIleAspLysAsnGlyGlu-195
 200-SerProTyrGlySerGluProGluThrIleAlaAlaAspVal-213

Hydrophilic Regions - Hopp-Woods

22-LysProGlnAspAsnSerAla-28
 39-SerAlaAlaGluAsnAlaAlaLysProGlnThrArgGlyThrAspMetArgLysGluAspIleGlyGly-61
 64-ThrLeuThrAspGlyGluGlyLysPro-72
 76-SerAspLeuLysGly-80
 111-GlyGlyGlnAlaLysAspValLys-118
 124-IleAspProGluArgAspThrProGluIleIle-134
 151-ThrGlyAspGlnAsn-155
 169-LysValAsnGlnLysAspAspSerGluAsnTyrLeu-180
 191-AspLysAsnGlyGlu-195
 203-GlySerGluProGluThrIleAlaAlaAspVal-213

a552-1**AMPHI Regions - AMPHI**

18-CysThrAsnAlaPheAlaAlaPro-25
 29-AlaSerLeuAlaArgTrpLeuAspThr-37
 41-AspArgAspIleGluLysAsnMetIleGluGlyPheAsnAlaGlyPheLysProTyrAlaAspLysAlaLeuAlaGluMet-67
 75-AlaAlaGluAlaPheAsnArgTyrArgGluAsnVal-86
 89-AspLeuIleThrProGluValLys-96

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116-IleAspGlyMetIleAla-121
 139-IleLysLysSerMetSerGluIle-146
 154-SerGlyLysIleAlaGlnHisHisLeuProGluPheThrGluGluLeuArgArg-171

Antigenic Index - Jameson-Wolf

25-ProProSerAspAlaSerLeu-31
 35-LeuAspThrGlnAsnPheAspArgAspIleGluLysAsnMetIle-49
 53-AsnAlaGlyPheLysProTyrAlaAspLysAlaLeuAlaGluMetProGluAlaLysLysAspGlnAlaAla-76
 78-AlaPheAsnArgTyrArgGluAsnValLeu-87
 90-LeuIleThrProGluValLysGlnAlaVal-99
 105-LysAsnAlaArgGluIleTyrThrGlnGluGluIleAspGly-118
 131-ValValAlaLysAsnProArgLeuIleLysLysSerMetSer-144
 153-LeuSerGlyLysIle-157
 164-GluPheThrGluGluLeuArgArg-171
 173-IleCysGlyGlyLysAsnProAspAlaGlyCysLysGlnAlaGlyGlnValGlyLysArgHisGlnLys-195

Hydrophilic Regions - Hopp-Woods

26-ProSerAspAlaSerLeu-31
 38-GlnAsnPheAspArgAspIleGluLysAsnMetIle-49
 58-ProTyrAlaAspLysAlaLeuAlaGluMetProGluAlaLysLysAspGlnAlaAla-76
 78-AlaPheAsnArgTyrArgGluAsnValLeu-87
 90-LeuIleThrProGluValLysGlnAlaVal-99
 105-LysAsnAlaArgGluIleTyrThr-112
 114-GluGluIleAspGly-118
 131-ValValAlaLysAsnProArgLeuIleLysLysSerMetSer-144
 164-GluPheThrGluGluLeuArgArg-171
 176-GlyLysAsnProAspAlaGlyCysLysGlnAlaGlyGlnValGlyLysArgHisGlnLys-195

a554**AMPHI Regions** - AMPHI

38-PheGlnThrProGluThrLeu-44
 71-AlaAlaLeuThrGlnLeuMet-77
 110-ArgMetPheValArgProGlyAspThrVal-119
 124-LeuLeuLysGlyMet-128
 148-SerIleGluAsnPheValGlnGlnMetAsnLysGlu-159
 185-AlaLysAspLeuAlaGlnLeuSerGluAlaLeuMetArgAspPheProGluTyrTyrProLeuPheSer-207
 296-ThrValAlaGlnIle-300
 331-GluGlnIleLeuGluThrIleGlnProIleProAla-342

Antigenic Index - Jameson-Wolf

23-AlaSerProAlaProAsnArgProThrAla-32
 37-ThrPheGlnThrProGluThr-43
 53-LeuGlnSerLysGln-57
 61-AlaLysAsnIleAsnThrProValGlu-69
 84-LysAsnMetLysSerGlyAsnIleArgSerGluGluAsnLeuLysIleProGlu-101
 104-TrpAlaSerGluGlySerArgMetPheValArgProGlyAspThrValSerThrAspLysLeuLeu-125
 143-ArgLeuGlyAsnGlySerIleGluAsnPhe-152
 156-MetAsnLysGluAlaArgArgLeuGlyMetLysAsnThrValPheLysAsnProThrGlyLeuSerArgGluGlyGlnValSerThrAlaLysAspLeuAlaGln-190
 194-AlaLeuMetArgAspPheProGluTyrTyr-203

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214-LysAsnIleGluGlnAsnAsnArgAsnIleLeu-224

226-TyrArgAspAsnAsnValAsnGlyLeuLysAlaGlyHisThrGluSerGlyGlyTyrAsn-245

250-TyrSerGlyAsnGlyArgHis-256

262-LeuGlySerGluSerAlaGluThrArgAlaSerAspAsnSerLys-276

285-PheAspThrProLysIleTyrProLysGlyLysThr-296

302-IleSerGlyGlySerLysLysThrValArg-311

323-ProHisLysGluAlaLysMetAlaGluGlnIleLeu-334

342-AlaProValLysLysGlyGlnIleLeuGlyLysIleLysIleArgGlnAsnGlyTyr-360

362-IleAlaGluLysGluIleValAla-369

371-GluAsnValLysLysArgSerArgTrpGlnArg-381

Hydrophilic Regions - Hopp-Woods

26-AlaProAsnArgProThrAla-32

85-AsnMetLysSerGlyAsnIleArgSerGluGluAsnLeuLysIleProGlu-101

107-GluGlySerArgMetPheValArgProGlyAspThrValSerThrAspLysLeuLeu-125

156-MetAsnLysGluAlaArgArgLeuGlyMet-165

174-ThrGlyLeuSerArgGluGlyGlnValSerThrAlaLysAspLeuAlaGln-190

214-LysAsnIleGluGlnAsnAsnArg-221

227-ArgAspAsnAsnValAsn-232

237-GlyHisThrGluSerGly-242

264-SerGluSerAlaGluThrArgAlaSerAspAsnSerLys-276

289-LysIleTyrProLysGlyLysThr-296

304-GlyGlySerLysLysThrValArg-311

323-ProHisLysGluAlaLysMetAlaGluGlnIleLeu-334

343-ProValLysLysGlyGlnIle-349

353-IleLysIleArgGln-357

362-IleAlaGluLysGluIleValAla-369

371-GluAsnValLysLysArgSerArgTrp-379

a556**AMPHI Regions - AMPHI**

61-IleGluArgLeuLys-65

Antigenic Index - Jameson-Wolf

1-MetAspAsnLysThrLysLeuArgLeu-9

52-ThrSerArgArgGlnGlnArgGlnPheIleGluArgLeuLysLysPheAspIleAspProGluLysGlyArgIleAsnGluAlaAsnLeuArgArgMetTyrHisSerGlyGlyGlnHisGlnLysAspAla-95

102-SerGlnLysCysSerValAspGluAlaHisAlaMetPheLysLysArgProThrArgGlnGluIleAsn-124

127-AlaAlaLysGlnSerArgGlyGlnLysArgProHisArg-139

Hydrophilic Regions - Hopp-Woods

1-MetAspAsnLysThrLysLeuArgLeu-9

53-SerArgArgGlnGlnArgGlnPheIleGluArgLeuLysLysPheAspIleAspProGluLysGlyArgIleAsnGluAlaAsnLeuArgArgMetTyr-85

90-GlnHisGlnLysAspAla-95

105-CysSerValAspGluAlaHisAlaMetPheLysLysArgProThrArgGlnGluIleAsn-124

127-AlaAlaLysGlnSerArgGlyGlnLysArgProHisArg-139

a557**AMPHI Regions - AMPHI**

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22-GlyAlaAspGlyIle-26
 55-SerGlyArgValAspAspAlaAla-62

Antigenic Index - Jameson-Wolf

20-LeuLysGlyAlaAspGlyIleSerProProLeuThrTyrArgSerTrpHisIleGluGlyGlyGlnAlaLeu-43
 54-AlaSerGlyArgValAspAspAlaAlaGly-63
 68-LeuArgIleAspSerValSerGlnAsnLysGluThrTyrThr-81
 100-GlnValLeuLysArgGlyGluProValGlyLysProMet-112
 123-AlaAspAsnGluIleLeuGlyLysGlnGluGluGluAla-135
 141-MetArgGlnAspAlaAlaGluGlnIleValArg-151

Hydrophilic Regions - Hopp-Woods

21-LysGlyAlaAspGlyIle-26
 56-GlyArgValAspAspAlaAlaGly-63
 68-LeuArgIleAspSerValSerGlnAsnLysGluThrTyrThr-81
 100-GlnValLeuLysArgGlyGluProValGly-109
 126-GluIleLeuGlyLysGlnGluGluGluAla-135
 141-MetArgGlnAspAlaAlaGluGlnIleValArg-151

a560**AMPHI Regions** - AMPHI

30-PheArgAspGlyAlaHisLysMetAlaArgValTrpValLysIleLeu-45
 167-ArgMetAlaLysMetPhe-172
 192-PheLeuLysTyrProGlyGlu-198
 218-MetGlyLysCysGluHisLeuIleGlu-226

Antigenic Index - Jameson-Wolf

29-ProPheArgAspGlyAlaHisLysMet-37
 61-GlyAlaGluAsnIleProAspArgProAla-70
 76-HisGlnSerGlyTrpGlu-81
 95-ValAlaLysArgGluLeuPhe-101
 116-IleGlyIleAspArgAsnAsnArgArgGluAlaAsnGluGlnLeuIle-131
 134-GlyLeuAlaArgLysAsnGluGlyTyr-142
 148-ProGluGlyThrArgLeuAlaProGlyLysArgGlyLysTyrLysLeuGlyGly-165
 182-AsnSerGlyGluPheTrpProLysAsnSerPheLeuLysTyrProGlyGluIle-199
 209-HisAlaSerGlySerGluAlaGluLeuMetGlyLysCysGluHisLeuIle-225
 242-MetProSerGluThrAla-247

Hydrophilic Regions - Hopp-Woods

29-ProPheArgAspGlyAlaHisLysMet-37
 64-AsnIleProAspArgProAla-70
 95-ValAlaLysArgGluLeuPhe-101
 116-IleGlyIleAspArgAsnAsnArgArgGluAlaAsnGluGlnLeuIle-131
 134-GlyLeuAlaArgLysAsnGlu-140
 149-GluGlyThrArgLeuAlaProGlyLysArgGlyLysTyrLysLeuGlyGly-165
 211-SerGlySerGluAlaGluLeuMetGlyLysCysGluHisLeuIle-225
 242-MetProSerGluThrAla-247

a561**AMPHI Regions** - AMPHI

22-GlyLeuTrpValGlyLeuAlaAla-29
 46-AlaSerValIleGluGluAlaGlyAsn-54
 79-ValAlaGluPheGluLysSerLeuLysArgIleAlaGln-91
 128-SerTyrArgArgProThrGlnVal-135
 172-MetThrLeuValSerSer-177
 188-ValIleArgProLeuGlnAlaLeuArgGluGlyAlaGluArgIleGlyArgArgCysPheAspIle-209

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219-PheLysGlnValGlyArgCysPheAsnGlnMet-229
238-AspAspLeuGluGlyGlnValAlaGluGlnThrArgSerLeuGluLysGln-254
265-ThrArgAspLeuHisGlnSer-271
275-GlnGlnAlaAlaGluHisPhe-281
283-AsnArgIleLeuPro-287
317-AlaSerAspLeuGlyLysTyrHisGlu-325
339-ArgLeuLeuLeuSerPheProAsnGly-347
358-LeuGlnThrLeuGlyArgGlnLeuGly-366
392-GlnGlyLeuHisAspSerIleAlaGlnAlaLeuThr-403
434-GlyValGlnGluCysTyrGluAspValArgGluLeu-445
456-LysGluPheProGluAlaValAlaAspLeuPheSerArgPheThrGlnGlnThrGly-474
504-LeuSerAsnIleArgLysHisAla-511
540-ThrGluAsnIleGlyGluProSer-547

Antigenic Index - Jameson-Wolf

6-ArgPheSerAspGlyIleSer-12
48-ValIleGluGluAlaGlyAsn-54
66-AlaGlyGluGlySerProArgAlaGlnIleAspAsnGlnValAlaGluPheGluLysSerLeuLysArgIleAlaGlnSerAspAlaIleHisPro-97
99-IleProSerAspThrProLeu-105
124-ProProLeuGlnSerTyrArgArgProThrGlnValAspLeu-137
152-GluAsnAlaAsnGluLysAsnThr-159
193-GlnAlaLeuArgGluGlyAlaGluArgIleGlyArgArgCysPheAsp-208
210-ProValProGluGlyGlyThrProGluPheLysGlnValGlyArgCysPheAsnGlnMetGlyGlyArgLeuLysIleLeuTyrAspAspLeuGluGlyGlnValAlaGluGlnThrArgSerLeuGluLysGlnAsnGlnAsnLeu-258
263-GlnThrThrArgAspLeuHisGlnSerTyrIle-273
289-ValGlyAlaAspSerGlyArgValCysLeuAspGlyGlySerAsp-303
310-HisAlaAspCysGlyThrAlaAlaSerAspLeuGlyLysTyrHisGlu-325
332-TyrGlnAsnGluThrLeuGly-338
344-PheProAsnGlyIleSerLeuAspGluAspAspArgIleLeu-357
360-ThrLeuGlyArgGlnLeu-365
371-GlyAlaLysGlnGluGluGluLysArgLeu-380
384-LeuGlnGluArgAsnLeu-389
394-LeuHisAspSerIle-398
415-AlaPheAlaGluAsnLysArgGluGluAlaAlaGlu-426
434-GlyValGlnGluCysTyrGluAspValArgGlu-444
450-ArgThrLysIleSerAsnLysGluPheProGluAlaVal-462
468-ArgPheThrGlnGlnThrGlyThrThrVal-477
480-AlaTrpGluAsnGlyThrHisLeuProThrGlnAspGluGlnLeu-494
503-SerLeuSerAsnIleArgLysHisAlaHis-512
519-ArgLeuLeuLysGlnAspGlySerPheThr-528
531-IleGlnAspAsnGlyGlnGlyPheAspThrGluAsnIleGlyGluProSerGlySerHis-550
556-MetGlnGluArgAlaLysArgIle-563
568-GluIleArgSerGlnAlaGlnGlnGlyThrThr-578
584-AlaSerGluGluSerLeuLys-590

Hydrophilic Regions - Hopp-Woods

48-ValIleGluGluAlaGlyAsn-54
68-GluGlySerProArgAlaGlnIle-75
78-GlnValAlaGluPheGluLysSerLeuLysArgIleAlaGln-91
128-SerTyrArgArgProThrGln-134
152-GluAsnAlaAsnGluLys-157
193-GlnAlaLeuArgGluGlyAlaGluArgIleGlyArgArgCysPhe-207
213-GluGlyGlyThrProGluPheLysGlnValGly-223

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235-IleLeuTyrAspAspLeuGluGlyGlnValAlaGluGlnThrArgSerLeuGluLysGlnAsnGln-256
 264-ThrThrArgAspLeuHis-269
 290-GlyAlaAspSerGlyArgValCysLeu-298
 312-AspCysGlyThrAlaAlaSerAspLeuGlyLysTyrHisGlu-325
 349-SerLeuAspGluAspAspArgIleLeu-357
 371-GlyAlaLysGlnGluGluGluLysArgLeu-380
 384-LeuGlnGluArgAsnLeu-389
 415-AlaPheAlaGluAsnLysArgGluGluAlaAlaGlu-426
 437-GluCysTyrGluAspValArgGlu-444
 451-ThrLysIleSerAsnLysGluPheProGluAlaVal-462
 488-ProThrGlnAspGluGlnLeu-494
 503-SerLeuSerAsnIleArgLysHisAlaHis-512
 519-ArgLeuLeuLysGlnAspGly-525
 533-AspAsnGlyGlnGlyPheAspThrGluAsnIleGlyGluProSerGly-548
 556-MetGlnGluArgAlaLysArgIle-563
 568-GluIleArgSerGlnAlaGln-574
 584-AlaSerGluGluSerLeuLys-590

a562**AMPHI Regions - AMPHI**

48-TrpSerLeuValSerAlaTrpMetValValIle-58
 84-LeuGluThrThrVal-88
 90-SerAlaValArgMetLeu-95
 97-PheThrProTyrThrThrValAlaSerThrSer-107
 116-ThrPhePheAlaProLeuSerArgThrLeu-125
 132-AsnAlaProValHisSerMetThrLysSerThrProSerSerPheHis-147
 183-ValSerAsnLeuValArgTrpAlaLeu-191

Antigenic Index - Jameson-Wolf

10-AsnSerGlySerThrLysProThr-17
 32-ProLeuArgAlaArgArgArgSerLeuTrpArg-42
 72-AlaThrGlyGluArgGlnLeuVal-79
 105-SerThrSerSerProProGlyAlaGluMet-114
 138-MetThrLysSerThrProSerSerPheHisGlySerSerAla-151
 154-ArgValXxxLysXxxGlyIle-160
 167-ArgLeuProProSerTrpAspThrSerAlaSerLysArgProCysThr-182

Hydrophilic Regions - Hopp-Woods

33-LeuArgAlaArgArgArgSerLeuTrp-41
 72-AlaThrGlyGluArgGlnLeuVal-79
 110-ProGlyAlaGluMet-114
 139-ThrLysSerThrPro-143
 175-SerAlaSerLysArgProCysThr-182

a565**AMPHI Regions - AMPHI**

50-AlaThrCysThrArgAlaMetSerLysSer-59
 66-SerSerTrpAlaArg-70
 84-IleSerThrTrpSerAspLeu-90
 103-AspPheMetSerGlnLeuAspLeuThr-111
 140-SerHisSerSerGluThrIleSerSerCysProAlaMetAlaSerIleThrLysProAsn-159
 184-AlaAsnThrThrSerAlaPhe-190

Antigenic Index - Jameson-Wolf

1-MetAspSerThrLeuSerLysThrCys-9
 23-PheAlaArgProArgProAlaAlaSerAsnThrSerLeu-35
 37-PheAlaSerProAsnAspThrGlySer-45

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55-AlaMetSerLysSerSerAlaLysTyrGly-64
 67-SerTrpAlaArgThrArgProThrValCysProProLeuProLysProThrIle-84
 99-CysArgSerSerAspPheMetSer-106
 109-AspLeuThrLysArgProThrSerAlaSerLeuProProLysArgLysGlyAlaIle-127
 129-IleAspSerArgThrAlaAla-135
 140-SerHisSerSerGluThrIleSerSerCysProAla-151
 155-IleThrLysProAsnSerProProCysAlaArgTyr-166
 170-LeuArgLeuSerProThrGlu-176
 194-SerIleAlaAsnSerIleAsnThrCysArgGlnProPro-206

Hydrophilic Regions - Hopp-Woods

24-AlaArgProArgProAlaAla-30
 39-SerProAsnAspThrGlySer-45
 55-AlaMetSerLysSerSerAla-61
 69-AlaArgThrArgPro-73
 100-ArgSerSerAspPhe-104
 109-AspLeuThrLysArgProThrSer-116
 119-LeuProProLysArgLysGlyAlaIle-127
 129-IleAspSerArgThr-133
 141-HisSerSerGluThrIleSer-147
 156-ThrLysProAsnSer-160

a566**Antigenic Index - Jameson-Wolf**

35-TyrProAsnCysGlyAlaAspGlyAlaGlyGlyLysGlyHis-48
 61-AlaValGlyGlyGluGluGlyGlyValValAlaAspAspValAlaArgAlaAspGlyGlyLysAlaAspGlyGlyArgIleAlaArg-89
 105-SerAlaGluArgAlaGlyAspAspPheAla-114

Hydrophilic Regions - Hopp-Woods

39-GlyAlaAspGlyAlaGlyGlyLysGlyHis-48
 63-GlyGlyGluGluGlyGlyValValAlaAspAspValAlaArgAlaAspGlyGlyLysAlaAspGlyGlyArgIleAlaArg-89
 105-SerAlaGluArgAlaGlyAspAspPheAla-114

a567**AMPHI Regions - AMPHI**

60-GlyValTyrGlnVal-64
 98-GluLeuValGlnGluIleAlaArgGluVal-107
 112-AlaLeuLysAlaVal-116
 154-TyrAlaLeuGluGlyIleSerAspLeuIleAlaThrValArgLysIleArgGln-171
 180-ThrGlyIleValArg-184
 195-AlaGluValSerGluGlnLeuArgSerHisPheGlyAspLeuLeu-209

Antigenic Index - Jameson-Wolf

10-AsnGlnLysGlyGlyValGlyLysThrThr-20
 28-LeuAlaSerArgGlyLysArg-34
 38-ValAspLeuAspProGlnGlyAsnAlaThrThrGlySerGlyIleAspLysAlaSerLeuGlnSerGly-60
 67-GlyAspAlaAspValLysSerAlaAlaValArgSerLysGluGlyGlyTyr-83
 95-AlaGluIleGluLeu-99
 101-GlnGluIleAlaArgGluValArgLeuLysAsnAlaLeu-113
 115-AlaValAlaGluAspTyrAsp-121
 127-CysProProSerLeu-131
 164-AlaThrValArgLysIleArgGlnAlaValAsnProAspLeuAspIle-179
 185-ThrMetTyrAspSerArgSerArgLeuValAlaGluValSerGluGlnLeuArgSerHisPheGlyAspLeu-208
 214-IleProArgAsnIleArgLeuAlaGluAlaProSerHisGly-227

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235-AlaGlnAlaLysGlyAlaLys-241
 248-AspGluLeuMetAla-252

Hydrophilic Regions - Hopp-Woods

10-AsnGlnLysGlyGlyValGlyLys-17
 28-LeuAlaSerArgGlyLysArg-34
 40-LeuAspProGlnGly-44
 50-SerGlyIleAspLysAlaSerLeu-57
 67-GlyAspAlaAspValLysSerAlaAlaValArgSerLysGluGlyGly-82
 95-AlaGluIleGluLeu-99
 101-GlnGluIleAlaArgGluValArgLeuLysAsnAlaLeu-113
 115-AlaValAlaGluAspTyrAsp-121
 164-AlaThrValArgLysIleArgGln-171
 175-ProAspLeuAspIle-179
 186-MetTyrAspSerArgSerArgLeuValAlaGluValSerGluGlnLeuArg-202
 216-ArgAsnIleArgLeuAlaGluAlaProSer-225
 235-AlaGlnAlaLysGlyAlaLys-241
 248-AspGluLeuMetAla-252

a568**AMPHI Regions - AMPHI**

31-SerIlePheArgArg-35
 48-LysAlaCysLysAsn-52
 70-GluLysAlaAsnThrValArgTyr-77
 81-SerLeuAlaGlnCysPheThr-87
 111-ArgProLeuProSerIleIleThrAla-119
 168-GluPheValGlyPheGlyAsnValPheValGlyGlnPheLeuAsnArgPhePhe-185
 199-GluGluPhePheAspValValVal-206
 227-PheAsnGlnValPheAlaAlaPheLeu-235
 240-HisArgHisAlaAspGlnValAlaAspSerCysArgValGlnSerGln-255

Antigenic Index - Jameson-Wolf

22-IleArgLeuLysArgSerArgLeuProSerIlePhe-33
 38-PheSerCysArgArgArgThrCysPheCysLysAlaCysLysAsnSerProIleArgAsnGluThrSerSerSerGlyArgArgGlnPheSerValGluLysAlaAsnThr-74
 90-SerAsnAlaSerLysProArgLeu-97
 99-ProIleMetArgGlyArgLysArgPhePheAla-109
 140-PheArgGlySerAlaPheLysCysArgLeuAsnAlaGluProCysArg-155
 213-AlaAspGlyAspAla-217
 236-GlyGlnHisGlyHisArgHisAlaAspGlnValAlaAspSerCysArgValGlnSerGln-255

Hydrophilic Regions - Hopp-Woods

22-IleArgLeuLysArgSerArgLeu-29
 40-CysArgArgArgThrCysPhe-46
 48-LysAlaCysLysAsnSerProIleArgAsnGluThrSerSerSerGlyArgArgGlnPheSerValGluLysAlaAsnThr-74
 92-AlaSerLysProArgLeu-97
 101-MetArgGlyArgLysArgPhePheAla-109
 143-SerAlaPheLysCysArgLeuAsnAlaGluProCysArg-155
 238-HisGlyHisArgHisAlaAspGlnValAlaAspSerCysArgVal-252

a569-2**AMPHI Regions - AMPHI**

29-AlaAlaPheCysGlyLeuIleAlaLeuThrAlaLeuTrpGluTyrAlaArgMetAlaGlyLeuCysLys-51
 86-PheTrpLeuAlaValMetPro-92
 161-IleAlaArgAlaIleSerProGlyLysSerTrpGluGlyAlaIle-175
 203-ThrValLeuIleGlyLeu-208

210-LeuThrValValSerValCysGlyAspLeuLeuGluSerTrpLeuLys-225

Antigenic Index - Jameson-Wolf

50-CysLysThrGluThrAsnHis-56
 98-LysTrpArgLeuAsnGlyGlyTrp-105
 124-SerLeuArgProHisProAspAspAlaLeu-133
 154-LysAlaLeuGlyLysHisLysIleAlaArg-163
 165-IleSerProGlyLysSerTrpGlu-172
 227-AlaAlaGlyIleLysAspSerSerAsnLeuLeuProGlyHis-240
 242-GlyValPheAspArgThrAspSer-249

Hydrophilic Regions - Hopp-Woods

50-CysLysThrGluThr-54
 127-ProHisProAspAspAlaLeu-133
 155-AlaLeuGlyLysHisLysIleAlaArg-163
 227-AlaAlaGlyIleLysAspSerSerAsn-235
 243-ValPheAspArgThrAspSer-249

a570

AMPHI Regions - AMPHI

6-ArgAlaPheAlaAlaAlaLeuIleGlyLeu-15
 22-HisAlaAspThrPheGlnLysIleGlyPheIleAsn-33
 43-GlnAlaArgLysIleGlnLysThrLeuAspSer-53
 60-AspGluLeuGlnLysLeuGln-66
 81-LeuLysAspAlaLysLys-86
 122-LeuGlnGlnAsnAlaAsnArgValIleValLysIle-133

Antigenic Index - Jameson-Wolf

33-AsnThrGluArgIleTyrLeuGluSerLysGlnAlaArgLysIleGlnLysThrLeuAspSerGluPheSerAlaArgGlnAspGluLeuGlnLysLeuGlnArgGluGlyLeuAspLeuGluArgGlnLeuAlaGluGlyLysLeuLysAspAlaLysLysAlaGlnAlaGluGluLysTrp-93
 100-PheArgLysLysGlnAlaGlnPheGluGluAspTyrAsnLeuArgArgAsnGluGluPheAla-120
 123-GlnGlnAsnAlaAsnArgVal-129
 133-IleAlaLysGlnGluGlyTyrAspValIle-142
 150-AsnThrGlnTyrAspValThrAspSerValIleLysGluMetAsnAlaArg-166

Hydrophilic Regions - Hopp-Woods

37-IleTyrLeuGluSerLysGlnAlaArgLysIleGlnLysThrLeuAspSerGluPheSerAlaArgGlnAspGluLeuGlnLysLeuGlnArgGluGlyLeuAspLeuGluArgGlnLeuAlaGluGlyLysLeuLysAspAlaLysLysAlaGlnAlaGluGluLysTrp-93
 100-PheArgLysLysGlnAlaGlnPheGluGluAspTyrAsnLeuArgArgAsnGluGluPheAla-120
 133-IleAlaLysGlnGluGlyTyr-139
 154-AspValThrAspSerValIleLysGluMetAsnAlaArg-166

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AMPHI Regions - AMPHI

6-AlaValAsnValLeu-10
 40-AspGlyAlaArgValPheArgAlaGly-48
 63-AlaAlaValAlaAspPhePheAlaVal-71
 94-ValGluValPheLysGlu-99

Antigenic Index - Jameson-Wolf

13-AlaAlaGlyArgGlyThr-18
 35-LysGlnAlaGlnAlaAspGlyAlaArgValPheArgAlaGlyHisArgGluGluGlnLeuGlyGlyAspVal-58
 77-ArgThrGluArgAlaAla-82
 96-ValPheLysGluGlyAspPhe-102

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110-ArgAsnAlaAspPheAlaAlaGluHisGlnArgGluGlyPheAlaGlyGluGluProGlyLeuValValGly-133
 143-GlyGlnGlyAspPheGlyVal-149
 154-ValAlaAlaArgArgPro-159

Hydrophilic Regions - Hopp-Woods

13-AlaAlaGlyArgGly-17
 35-LysGlnAlaGlnAlaAspGlyAlaArgValPheArgAlaGlyHisArgGluGluGlnLeuGly-55
 77-ArgThrGluArgAlaAla-82
 96-ValPheLysGluGlyAspPhe-102
 110-ArgAsnAlaAspPheAlaAlaGluHisGlnArgGluGlyPheAlaGlyGluGluProGly-129
 154-ValAlaAlaArgArgPro-159

a572**AMPHI Regions - AMPHI**

6-GlyAlaValGlyLeuProSerAlaLeuAla-15
 61-GlnValLeuProArgAspTyrThrGlyArg-70
 94-AsnThrPheAspSerIle-99
 126-LysGlyLeuGluLeu-130
 154-IleHisSerMetValArg-159
 183-GlyLeuProGluArgIleAspSerGly-191
 200-LeuSerAlaLeuThr-204
 241-ValAlaAlaPheLeu-245
 251-PheThrAspIleAlaLysThrValAlaHisCysLeuSerGlnAspPheSerAspGlyIleGlyAspIleGlyGly-275

Antigenic Index - Jameson-Wolf

18-GlnLysGlyLysThr-22
 26-AlaAsnLysGluThrLeu-31
 41-ThrAlaArgAlaAsnGly-46
 51-ProValAspSerGluHis-56
 63-LeuProArgAspTyrThrGlyArgLeuAsnGluHisGly-75
 94-AsnThrPheAspSerIleThrProAspGlnAlaValLysHisProAsnTrpArgMetGlyArgLysIleSerValAspSer-120
 125-AsnLysGlyLeuGluLeu-130
 138-AsnCysProProAspLysLeuGluVal-146
 158-ValArgTyrArgAspGlySerVal-165
 170-GlyAsnProAspMetArgThr-176
 184-LeuProGluArgIleAspSerGlyValGlyAspLeuAspPhe-197
 204-ThrPheGlnLysProAspPheAspArg-212
 263-SerGlnAspPheSerAspGlyIleGlyAspIleGly-274
 279-GlnAspAlaArgThrArgAlaGlnAla-287

Hydrophilic Regions - Hopp-Woods

27-AsnLysGluThrLeu-31
 41-ThrAlaArgAlaAsnGly-46
 52-ValAspSerGluHis-56
 66-AspTyrThrGlyArgLeuAsnGlu-73
 111-ArgMetGlyArgLysIleSerVal-118
 126-LysGlyLeuGluLeu-130
 140-ProProAspLysLeuGlu-145
 158-ValArgTyrArgAspGlySer-164
 170-GlyAsnProAspMetArgThr-176
 184-LeuProGluArgIleAspSerGlyValGlyAspLeuAspPhe-197
 206-GlnLysProAspPheAspArg-212
 265-AspPheSerAspGlyIleGly-271

279-GlnAspAlaArgThrArgAlaGlnAla-287

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AMPHI Regions - AMPHI

6-ProAsnSerLeuGluLys-11

47-LeuLysGlnAlaLysSerIleProSerGlyPheTyrLysSerLeuAspAlaLeuValAspArgAsnSerGlyArgAlaAlaArgGluLeuAlaGluValValAsp-81

94-GlyLysLeuTyrArgGln-99

110-HisGlnThrLeuLeuAspSerProAspThrThrGly-121

175-GluLysAlaValGluThrAlaArgLeu-183

218-AsnValGlyLysAlaLeuGluAlaAsnLysLysCys-229

246-PheProAlaAlaValGluAlaTyrAlaAlaIleGlu-257

266-MetValGlyGluLysLeuTyrGluAlaTyrAla-276

281-ProGluGluGlyLeuAsnArgLeuThrGlyTyrMetGlnThrPheProGluLeuAspLeu-300

332-AsnGlyValTyrArg-336

357-ArgSerValIleGlyArgGlnLeuGlnArgSer-367

Antigenic Index - Jameson-Wolf

1-MetArgProAsnLeuProAsnSerLeuGluLysAlaAspMetAspAsn-16

45-ThrValLeuLysGlnAlaLysSerIleProSerGlyPheTyrLysSerLeuAspAlaLeuValAspArgAsnSerGlyArgAlaAlaArgGluLeuAlaGluValValAspGlyArgProGlnSerTyrAsp-88

96-LeuTyrArgGlnArgGlyGluAsnAspLysAlaIle-107

113-LeuLeuAspSerProAspThrThrGlyAlaLysArgAlaArgVal-127

135-TyrGlnSerAlaGlyLeuValAspArgAlaGlu-145

151-LeuGlnAspGlyGluMetAlaArgGluAlaArgGln-162

168-TyrGlnGlnAspArgAspTrpGluLysAlaValGluThr-180

182-ArgLeuLeuSerHisAspAspGlnThrTyr-191

210-SerAsnPheAspAlaAlaArg-216

221-LysAlaLeuGluAlaAsnLysLysCysThrArg-231

238-AspIleGluHisArgGlnGlyAsn-245

277-AlaGlnGlyLysProGluGluGlyLeuAsnArgLeuThrGlyTyr-291

312-LysCysGluLysGluAlaAla-318

323-GluLeuValArgArgLysProAspLeuAsnGly-333

341-LysLeuSerAspLeuAspProAlaTrpLysAlaAspAlaAspMetMetArg-357

368-ValMetTyrArgCysArgAsnCysHisPheLys-378

386-CysProAlaCysAsnLysTrpGlnThrPheThrProAsnLysIleGluVal-402

Hydrophilic Regions - Hopp-Woods

1-MetArgProAsnLeu-5

7-AsnSerLeuGluLysAlaAspMetAspAsn-16

45-ThrValLeuLysGlnAlaLysSerIle-53

62-AspAlaLeuValAspArgAsnSerGlyArgAlaAlaArgGluLeuAlaGluValValAspGlyArgProGlnSer-86

96-LeuTyrArgGlnArgGlyGluAsnAspLysAlaIle-107

115-AspSerProAspThrThrGlyAlaLysArgAlaArgVal-127

140-LeuValAspArgAlaGlu-145

152-GlnAspGlyGluMetAlaArgGluAlaArgGln-162

169-GlnGlnAspArgAspTrpGluLysAlaValGluThr-180

184-LeuSerHisAspAspGlnThrTyr-191

211-AsnPheAspAlaAlaArg-216

221-LysAlaLeuGluAlaAsnLysLysCysThrArg-231

238-AspIleGluHisArgGlnGlyAsn-245

279-GlyLysProGluGluGlyLeuAsn-286

312-LysCysGluLysGluAlaAla-318

323-GluLeuValArgArgLysProAspLeu-331

341-LysLeuSerAspLeuAspPro-347

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349-TrpLysAlaAspAlaAspMetMetArg-357
 368-ValMetTyrArgCysArgAsnCysHis-376
 398-AsnLysIleGluVal-402

a575**AMPHI Regions - AMPHI**

8-PheArgLysProAlaSer-13
 20-PheAlaGluAlaVal-24
 42-SerThrValSerGlyLeuPheSerAla-50
 114-LeuSerLysSerLysSer-119
 139-SerSerAspSerPro-143
 150-PheThrSerPhePheGly-155
 163-ValSerThrSerAlaLysValIleSerMetPro-173
 217-SerLysValTyrGluProProAsn-224
 233-AlaGluThrCysSerThr-238
 283-AlaGlyPheSerAlaPheAlaSerGlyAla-292
 294-ThrPheAlaSerGlyPheSerThrGly-302
 304-SerThrValAlaCys-308
 311-GlySerAspGlyMetAspAlaValSerAlaLeu-321

Antigenic Index - Jameson-Wolf

2-ValSerGlyGluGluAlaPheArgLysProAlaSerProGluGlyGluAlaGlyPhe-20
 34-GlyArgLeuSerGluLysSerValSer-42
 54-ThrAspSerGlySerGlyVal-60
 96-SerSerSerCysValSerAlaProAspLysMetProPhe-108
 113-ArgLeuSerLysSerLysSerMetArgLeuGluGly-124
 134-PheAlaAspAsnSerSerSerAspSerProSerLysAlaSerVal-148
 155-GlyAlaGlySerGly-159
 173-ProSerSerAlaAlaSerSerArgSerGlySerSerSerGlyThrAspSerSerValArgArgAlaArgLeu
 AspTrpAlaArgArgLysSerSerSerArgAlaIle-208
 211-AlaProProProAlaSer-216
 218-LysValTyrGluProProAsnSerProLeu-227
 230-SerSerSerAlaGluThrCysSerThrGlySerGluThr-242
 261-GlyAlaAspSerAlaAlaVal-267
 276-GlyThrGlySerGlyArgThrAla-283
 299-PheSerThrGlyPhe-303
 309-LeuAspGlySerAspGlyMetAsp-316

Hydrophilic Regions - Hopp-Woods

2-ValSerGlyGluGluAlaPheArgLysProAlaSerProGluGlyGluAlaGlyPhe-20
 34-GlyArgLeuSerGluLysSerValSer-42
 101-SerAlaProAspLysMetPro-107
 113-ArgLeuSerLysSerLysSerMetArgLeuGluGly-124
 137-AsnSerSerSerAspSerProSerLysAla-146
 176-AlaAlaSerSerArgSerGlySerSerSerGlyThrAspSerSerValArgArgAlaArgLeuAspTrpAla
 ArgArgLysSerSerSerArgAlaIle-208
 231-SerSerAlaGluThrCysSerThrGlySerGluThr-242
 310-AspGlySerAspGlyMetAsp-316

a576-1**AMPHI Regions - AMPHI**

31-AlaSerGluProAlaAlaAla-37
 46-SerIleGlySerThr-50
 63-GlyArgSerLeuLysGlnMetLys-70
 82-ThrGluAlaMetGln-86
 102-GlnGluValMetMetLysPheLeuGlnGluGlnGlnAlaLysAlaValGluLysHis-120
 140-AlaLysAspGlyValLysThrThr-147

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202-IleLeuGlyTrpThrGluGlyVal-209

Antigenic Index - Jameson-Wolf

20-AlaCysGlyLysLysGluAlaAlaPro-28
 30-SerAlaSerGluProAlaAla-36
 38-SerSerAlaGlnGlyAspThrSerSerIleGly-48
 61-AspIleGlyArgSerLeuLysGlnMetLysGluGlnGlyAlaGluIleAspLeu-78
 89-TyrAspGlyLysGluIleLysMetThrGluGluGlnAlaGln-102
 109-LeuGlnGluGlnGlnAlaLysAlaValGluLysHisLysAlaAspAlaLysAlaAsnLysGluLysGlyGlu
 AlaPheLeuLysGluAsnAlaAlaLysAspGlyValLysThrThrAlaSerGlyLeu-151
 154-LysIleThrLysGlnGlyGluGlyLysGlnProThrLysAspAspIleVal-170
 173-GluTyrGluGlyArgLeuIleAsp-180
 183-ValPheAspSerSerLysAlaAsnGlyGly-192
 210-GlnLeuLeuLysGluGlyGlyGlu-217
 224-SerAsnLeuAlaTyrArgGluGlnGlyAlaGlyAspLysIleGlyProAsnAla-241
 253-GlyAlaProGluAsnAlaProAlaLysGlnProAla-264
 266-ValAspIleLysLysValAsn-272

Hydrophilic Regions - Hopp-Woods

21-CysGlyLysLysGluAlaAlaPro-28
 30-SerAlaSerGluProAlaAla-36
 40-AlaGlnGlyAspThrSerSer-46
 61-AspIleGlyArgSerLeuLysGlnMetLysGluGlnGlyAlaGluIleAspLeu-78
 89-TyrAspGlyLysGluIleLysMetThrGluGluGlnAlaGln-102
 112-GlnGlnAlaLysAlaValGluLysHisLysAlaAspAlaLysAlaAsnLysGluLysGlyGluAlaPheLeu
 LysGluAsnAlaAlaLysAspGlyValLysThrThrAla-148
 155-IleThrLysGlnGlyGluGlyLysGlnProThrLysAspAspIleVal-170
 173-GluTyrGluGlyArgLeuIleAsp-180
 185-AspSerSerLysAlaAsnGly-191
 210-GlnLeuLeuLysGluGlyGlyGlu-217
 227-AlaTyrArgGluGlnGlyAlaGlyAspLysIleGlyPro-239
 253-GlyAlaProGluAsnAlaProAlaLysGlnProAla-264
 266-ValAspIleLysLysValAsn-272
a577

AMPHI Regions - AMPHI

8-GlyLysIleValGlyAsn-13
 24-AlaAlaSerTyrProLysProCysLysSerPheLysLeuAla-37
 62-ThrValIleLysIleIle-67
 104-AlaPheValValGlyIle-109
 112-GlyMetPheAlaLeuPheGlyArg-119
 144-GluLeuThrAlaProProAlaGln-151

Antigenic Index - Jameson-Wolf

1-MetGluArgAsnGlyVal-6
 14-ArgIleLeuArgMetSerSerGluHisAla-23
 26-SerTyrProLysProCysLysSerPheLys-35
 44-ArgSerCysProGlyGly-49
 88-LeuProGlyGlnLysPheAspLeu-95
 121-LeuSerLeuArgGlyGluAsnGlyArgLeuArgAlaGluValLysLysAsnAlaArgLeuThrGlyLysGlu
 LeuThrAlaProProAlaGlnAsnAlaProGluSerAlaLysGlnPro-160

Hydrophilic Regions - Hopp-Woods

1-MetGluArgAsnGlyVal-6
 14-ArgIleLeuArgMetSerSerGluHisAla-23

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29-LysProCysLysSerPheLys-35
 121-LeuSerLeuArgGlyGluAsnGlyArgLeuArgAlaGluValLysLysAsnAlaArgLeuThrGlyLysGlu
 LeuThr-146
 152-AsnAlaProGluSerAlaLysGlnPro-160

a578**AMPHI Regions - AMPHI**

10-PheAlaAspPhePheLysAspPheAlaProGlnPheGlyGlyPheGlnAsn-26
 34-AspPhePheAlaAlaPheLeuGlyGlyLeuGlu-44
 71-AsnThrAspAlaAlaArgPhe-77

Antigenic Index - Jameson-Wolf

2-GlyLysLeuAspIle-6
 13-PhePheLysAspPheAlaProGlnPheGlyGly-23
 43-LeuGluGlyAspValGlyAsnThrAla-51
 71-AsnThrAspAlaAlaArgPheAla-78
 88-HisAsnGlnAsnIleGlnThrArgAsnAspPheArgLeuGluArgGlyGlyValGly-106

Hydrophilic Regions - Hopp-Woods

2-GlyLysLeuAspIle-6
 43-LeuGluGlyAspValGlyAsn-49
 73-AspAlaAlaArgPheAla-78
 92-IleGlnThrArgAsnAspPheArgLeuGluArgGlyGlyVal-105

a579**AMPHI Regions - AMPHI**

6-PheAspPheLeuHisLeuIleSerAlaSerGlyTrpGluHisLeuAlaGlu-22
 49-ValAlaValMetArg-53
 66-IleSerPheLeuCysAsn-71
 115-LeuSerAsnPheAla-119
 129-ProPheLysValGlyAspPheIleArgValGlyGlyPheGluGlyTyrValArgGluIleLys-149
 258-GlnValValGluAsnLeuArg-264

Antigenic Index - Jameson-Wolf

110-SerLeuLysAspGlnLeuSer-116
 128-ArgProPheLysVal-132
 136-IleArgValGlyGlyPheGluGlyTyrValArgGluIleLysMet-150
 154-SerLeuArgThrThrAspAsnGluGluValValLeu-165
 175-IleValAsnArgSerThrLeu-181
 198-LeuLysValAlaLysGluAlaValLeu-206
 216-ValGlnAsnGluGluArgGlnAla-223
 231-GlyAspAsnAlaIle-235
 244-AsnGluAlaAspArgTrpThrLeu-251
 253-CysAspLeuAsnGluGlnValValGluAsnLeuArgLysValAsn-267
 271-ProPheProGlnArgAspIleHis-278

Hydrophilic Regions - Hopp-Woods

110-SerLeuLysAspGlnLeu-115
 144-TyrValArgGluIleLysMet-150
 155-LeuArgThrThrAspAsnGluGluValVal-164
 198-LeuLysValAlaLysGluAlaValLeu-206
 216-ValGlnAsnGluGluArgGlnAla-223
 244-AsnGluAlaAspArgTrp-249
 254-AspLeuAsnGluGlnValValGluAsnLeuArgLysValAsn-267
 273-ProGlnArgAspIleHis-278

a580**AMPHI Regions - AMPHI**

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47-ProValSerAlaSerLys-52
 54-SerLeuValLysProLeuSerGlnProLeuAla-64

Antigenic Index - Jameson-Wolf

1-MetAspSerProLysValGlyCysGly-9
 48-ValSerAlaSerLys-52
 66-AlaArgProGluAlaAlaHis-72
 81-ArgProGluAlaLeuAlaAspAsnSerValSerProThrHisAlaThrSerGlyGluVal-100

Hydrophilic Regions - Hopp-Woods

1-MetAspSerProLysVal-6
 66-AlaArgProGluAlaAlaHis-72
 81-ArgProGluAlaLeuAla-86
 96-ThrSerGlyGluVal-100

a581**AMPHI Regions** - AMPHI

43-SerHisPheIleSerLeu-48
 56-ArgGluCysPheValGlyPhe-62
 76-AlaThrAlaPheGlyArgIleAsnGln-84
 91-ValHisGlyPheLeuThrThrPheAla-99

Antigenic Index - Jameson-Wolf

8-GlyGlnThrGlyIleGluGlnAsnThrPheCysArgArgGlyPheThrArgIleAspMetGlyGlyAsnThrAspVal-33
 35-ValGlnAlaAspArgGlyLeuThrSer-43
 49-SerLysLeuGluThrGluValArgGluCysPhe-59
 98-PheAlaGlyArgIleAsnProAlaHisCysGlnSerGlnThrAla-112

Hydrophilic Regions - Hopp-Woods

35-ValGlnAlaAspArgGlyLeu-41
 49-SerLysLeuGluThrGluValArgGlu-57

a582**AMPHI Regions** - AMPHI

27-ThrAspAsnValThrArgLeuAla-34
 65-ValArgSerSerLeu-69
 91-GlyGluThrAlaAspIleTyrThrProLeuSer-101
 139-GlySerProThrArg-143
 169-IleAlaGluAspLeuPhe-174
 246-SerArgSerTrpAsnArgIleTyrAlaMet-255
 263-LeuThrValIleProArgValTrpValArgAlaPheAspGlnSer-277
 286-IleAlaAspTyrMetGlyTyr-292
 334-LeuLysGlyValValArgGlyPheHisGlyTyrGlyGlu-346

Antigenic Index - Jameson-Wolf

26-LeuThrAspAsnValThr-31
 34-AlaCysTyrAspArg-38
 44-LeuProSerSerAlaGlyGlnGluGlyGlnGluSerLysAla-57
 63-GluThrValArgSerSerLeuAspLysGlyGluAla-74
 77-ValValGluLysGlyGlyAspAlaLeuProAlaAspSerAlaGlyGluThrAlaAsp-95
 105-AspLeuAspLysAsnAspLeuArgGly-113
 115-LeuGlyValArgGluHisAsnProMetTyr-124
 131-AsnAsnSerProAsnTyrAlaProGlySerProThrArgGlyThrThrValGlnGluLysPheGlyGlnGlnLysArgAlaGluThrLysLeu-161
 165-PheLysSerLysIleAlaGluAspLeuPheLysThrArgAla-178

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183-GlyTyrThrGlnArgSerAspTrpGlnIleTyrAsnGlnGlyArgLysSerAlaProPheArgAsnThrAsp
TyrLysPro-209
216-ProValLysAlaAspLeuProPheGlyGlyArgLeuArgMet-229
237-GlnSerAsnGlyGlnSerArgProGluSerArgSerTrpAsn-250
273-AlaPheAspGlnSerGlyAspLysAsnAspAsnProAspIleAlaAsp-288
291-GlyTyrGlyAspValLysLeuGlnTyrArgLeuAsnAspArgGlnAsnVal-307
312-ArgTyrAsnProLysThrGlyTyr-319
330-IleLysGlyLysLeuLysGlyValVal-338
342-HisGlyTyrGlyGluSerLeuIleAspTyrAsnHisLysGlnAsnGly-357
365-AsnAspLeuAspGlyIle-370

Hydrophilic Regions - Hopp-Woods

48-AlaGlyGlnGluGlyGlnGluSerLysAla-57
63-GluThrValArgSerSerLeuAspLysGlyGluAla-74
79-GluLysGlyGlyAspAlaLeuPro-86
88-AspSerAlaGlyGluThrAlaAsp-95
105-AspLeuAspLysAsnAspLeuArgGly-113
115-LeuGlyValArgGluHisAsn-121
140-SerProThrArgGlyThrThrValGlnGluLysPheGlyGlnGlnLysArgAlaGluThrLysLeu-161
165-PheLysSerLysIleAlaGluAspLeuPheLysThrArgAla-178
195-GlnGlyArgLysSerAlaProPheArgAsnThrAspTyrLysPro-209
225-GlyArgLeuArgMet-229
239-AsnGlyGlnSerArgProGluSerArgSerTrp-249
274-PheAspGlnSerGlyAspLysAsnAspAsnProAspIleAlaAsp-288
293-GlyAspValLysLeu-297
299-TyrArgLeuAsnAspArgGlnAsn-306
332-GlyLysLeuLysGlyValVal-338
352-AsnHisLysGlnAsn-356

a583**AMPHI Regions - AMPHI**

11-HisLeuAlaPheCysAlaPheCysGlyIle-20
28-ArgLeuHisAsnArgMetTyrAsnAlaAlaAlaAlaArg-40
58-ValThrAspAlaGln-62
66-SerLysAsnGlyAspLysGlnIle-73
75-AspThrHisProGlnPro-80
117-GlyTyrAlaGlyTyrCysAspGln-124
140-AspAsnGlyGlyAsnHisThrAsp-147
162-GlyTyrGlyGlnCysGlnAsnGlnGlyAla-171

Antigenic Index - Jameson-Wolf

24-ThrAlaGlyAsnArgLeuHisAsnArgMetTyr-34
41-GlyIleGlyArgGlyAsnGlySerGlnGlnGlnPheGlyLysSerGluThrValThrAspAlaGlnArgPheS
erSerLysAsnGlyAspLysGlnIleSerAspThrHisProGlnProCysPheGluGlnThrAlaArgAsnHisAs
nCysAspGlyAsnGlnProAsnGlnArgIleGlyGluArgThrGlnArgIleAlaHisArgArgThrArgPheVal
GlyGlyTyrAlaGlyTyrCysAspGlnProAspGlyAsnAsnArgGlnArgThrGlnArgHisGlyLeuAlaAspA
snGlyGlyAsnHisThrAspLysHisGlyGlnGlnArgProSerLeuArgLeuAspProValGlyTyrGlyGlnCy
sGlnAsnGlnGlyAlaGlnTyrCysGlyAsnGlyGluGlyTyrArgPhe-182
190-AspLeuArgLysLysAspArgProGluLysSerGluLys-202

Hydrophilic Regions - Hopp-Woods

27-AsnArgLeuHisAsn-31
41-GlyIleGlyArgGlyAsnGlySer-48
51-GlnPheGlyLysSerGluThrValThrAspAlaGlnArgPheSerSerLysAsnGlyAspLysGlnIleSerA
spThrHisPro-78

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84-GlnThrAlaArgAsnHisAsnCysAspGlyAsnGlnProAsnGlnArgIleGlyGluArgThrGlnArgIleAlaHisArgArgThrArgPhe-114
 123-AspGlnProAspGlyAsnAsnArgGlnArgThrGlnArg-135
 137-GlyLeuAlaAspAsnGlyGlyAsnHisThrAspLysHisGlyGlnGlnArgProSerLeuArgLeuAspPro-160
 178-GluGlyTyrArgPhe-182
 190-AspLeuArgLysLysAspArgProGluLysSerGluLys-202

a584-2**AMPHI Regions - AMPHI**

28-GluPheSerGluSerAlaGlyValGluAlaValGlnAspThrMet-42
 60-AlaGluPheValLysLysPheAsnAsnPheThrArgLys-72
 116-PheAspAlaLeuAsnArgPheIleAlaAspVal-126
 148-IleAspGlnValSerLysAsp-154
 166-LeuAlaGlyValLeuGly-171
 186-GlySerHisIleAla-190
 196-GlnAlaLysMetLeuArgAlaMet-203

Antigenic Index - Jameson-Wolf

50-AlaGluGlyArgAspLysAsnAlaVal-58
 61-GluPheValLysLysPheAsnAsnPheThrArgLysSerLysAsnGlySerPheLysThrGluLeuValSerArgSerAlaMetProArgTyrGlnTyrThrAsnGlyArgArgIleGlnThrGlyTrpGluGluArgAlaGluPheLysValGluGlyArgAsnPheAspAla-118
 138-HisValSerArgGluArgArgAsnGluValIleAspGlnValSerLysAspAlaValLeu-157
 159-PheLysAlaArgAlaGluLysLeuAla-167
 189-IleAlaGlyGlyGly-193
 210-AsnMetGluGlyAlaAspSerAlaAlaProGlyValGluGluIleSer-225

Hydrophilic Regions - Hopp-Woods

50-AlaGluGlyArgAspLysAsnAlaVal-58
 67-AsnAsnPheThrArgLysSerLysAsnGlySerPheLysThrGluLeuValSer-84
 95-AsnGlyArgArgIleGlnThrGlyTrpGluGluArgAlaGluPheLysValGluGlyArgAsnPheAspAla-118
 138-HisValSerArgGluArgArgAsnGluValIleAspGlnValSerLysAspAlaValLeu-157
 159-PheLysAlaArgAlaGluLysLeuAla-167
 210-AsnMetGluGlyAlaAspSerAlaAlaProGlyValGluGluIleSer-225

a585**AMPHI Regions - AMPHI**

6-ArgIlePheAlaThrPheCysAlaValIleValCys-17
 46-ThrThrLeuMetGlySerIleIleSer-54
 65-ArgGluIleLeuThrGluTrpLysAsp-73
 93-HisArgTyrIleAspSer-98
 133-LysAspTrpAspLysLeuGlnAlaArgArg-142
 153-ProLeuAlaProIleTrp-158
 178-LeuAlaGlyAsnIleAlaLysProIleArgIleLeuGlyAsnGlyMetAspArgValAla-197
 223-PheAspLysMetValGluLysLeuGluLysLeuVal-234
 247-GluMetArgSerPro-251
 255-MetGlnAlaIleValGlyLeuIle-262
 273-LeuLysArgLeuGluGly-278
 353-LeuTyrArgAlaPheAspAsnValIleArgAsnAlaValAsn-366
 430-IleIleGluGlnHisCysGlyLysIleIleAlaGlu-441

Antigenic Index - Jameson-Wolf

36-AsnGlnPheAsnGlnArgArgThrIleGlu-45
 56-PheArgAlaArgGlyAspAlaGlyAlaArgGluIleLeuThrGluTrpLysAspSerProValSer-77
 84-GlnGlyAspGluLysLysAspIleLeu-92

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97-AspSerTyrThrIleGluArgAlaArgLeu-106
 120-GluTyrAspArgPheGlyGlu-126
 133-LysAspTrpAspLysLeuGlnAlaArgArgLeuProSerPro-146
 189-LeuGlyAsnGlyMetAspArgValAlaAsnGlyGluLeuGluThrArgIle-205
 207-GlnGlnValAspAspArgAspAspGluLeuSer-217
 225-LysMetValGluLysLeuGluLysLeuValAlaLysGluArgHisLeu-240
 246-HisGluMetArgSerProLeuAla-253
 264-AlaGlnProGlnLysGlnGluGlnTyrLeuLysArgLeuGluGlyGluLeuThrArgMetAspThrLeuAla-287
 294-SerArgLeuGluThrSerAsnMetAlaLeuGluLysGluSerLeuLys-309
 317-LeuValGluAspAsnGlnSerIleAlaGlnLysAsnGlyGln-330
 335-SerAlaAspGlyLysIleProGluAsnThr-344
 367-TyrSerProGluGlySerThr-373
 377-AsnIleGlyGlnAspHisLysHis-384
 388-AspValThrAspAsnGlyProGlyValAspGluMetGln-400
 409-TyrArgAlaAspSerSerAlaAsnLysProGlyThrGly-421
 432-GluGlnHisCysGlyLysIleIleAlaGluAsnIleLysProAsnGlyLeuArg-449
 453-IleLeuProLysLysLysThrGlySerLysThrGluLysSerAlaAsn-468

Hydrophilic Regions - Hopp-Woods

37-GlnPheAsnGlnArgArgThrIleGlu-45
 56-PheArgAlaArgGlyAspAlaGlyAlaArgGluIleLeuThrGluTrpLysAspSerProVal-76
 84-GlnGlyAspGluLysLysAspIleLeu-92
 100-ThrIleGluArgAlaArgLeu-106
 120-GluTyrAspArgPheGlyGlu-126
 133-LysAspTrpAspLysLeuGlnAlaArgArgLeuPro-144
 192-GlyMetAspArgValAlaAsnGlyGluLeuGluThrArgIle-205
 207-GlnGlnValAspAspArgAspAspGluLeuSer-217
 225-LysMetValGluLysLeuGluLysLeuValAlaLysGluArgHisLeu-240
 246-HisGluMetArgSerProLeu-252
 265-GlnProGlnLysGlnGluGlnTyrLeuLysArgLeuGluGlyGluLeuThrArgMetAspThrLeuAla-287
 294-SerArgLeuGluThr-298
 302-AlaLeuGluLysGluSerLeuLys-309
 317-LeuValGluAspAsnGlnSerIleAlaGlnLysAsnGlyGln-330
 336-AlaAspGlyLysIleProGlu-342
 389-ValThrAspAsnGlyProGlyValAspGluMetGln-400
 410-ArgAlaAspSerSerAlaAsnLysProGlyThr-420
 438-IleIleAlaGluAsnIleLys-444
 454-LeuProLysLysLysThrGlySerLysThrGluLysSerAlaAsn-468

a586**AMPHI Regions - AMPHI**

12-AspAsnPheLysTyrPheTrpLysThr-20
 30-IleLeuAlaAlaLeuGly-35
 56-ValLeuAlaAsnIleValGluLysAlaGlnAsnLysAlaPro-69
 80-LeuGlnGlnSerTyrProHisSerIleSer-89
 177-SerGlnGluAlaLeuLysAsnTyrGlyGlnAlaLeuGluLysMetProGlnAspSerValGlyArg-198

Antigenic Index - Jameson-Wolf

4-HisLeuGluGluGlnGlnGluLeuAspAsn-13
 43-GlnAsnArgAlaAlaSerGlnAsnGlnGluAla-53
 60-IleValGluLysAlaGlnAsnLysAlaProGlnSerGluIleAsnAlaGluLeuAlaLysLeuGlnGln-82
 100-ThrGluPheAspAlaGlnArgTyrAspValAlaGluGly-112
 118-LeuSerAsnGlnLysAspSerLeu-125
 140-GlnGlnLysLysTyrAspAla-146

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153-ThrProValGluAlaAspPhe-159
 164-MetGluThrLysGlyAspVal-170
 173-AlaGlnGlyLysSerGlnGluAlaLeuLysAsnTyrGlyGlnAlaLeuGluLysMetProGlnAspSerVal
 GlyArgGluLeuVal-201
 204-LysLeuAspSerLeuLys-209

Hydrophilic Regions - Hopp-Woods

4-HisLeuGluGluGlnGlnGluLeuAspAsn-13
 45-ArgAlaAlaSerGlnAsnGlnGluAla-53
 60-IleValGluLysAlaGlnAsnLysAlaProGlnSerGluIleAsnAlaGluLeuAlaLys-79
 100-ThrGluPheAspAlaGlnArgTyrAspValAlaGluGly-112
 120-AsnGlnLysAspSerLeu-125
 140-GlnGlnLysLysTyrAspAla-146
 153-ThrProValGluAlaAspPhe-159
 164-MetGluThrLysGlyAspVal-170
 174-GlnGlyLysSerGlnGluAlaLeuLys-182
 187-AlaLeuGluLysMetProGlnAspSerValGlyArgGluLeuVal-201
 204-LysLeuAspSerLeuLys-209

a587**AMPHI Regions - AMPHI**

6-LeuProAlaLeuProAlaIleLeuProLeuSerAla-17
 232-LysGlnProAspArgLeuAsp-238

Antigenic Index - Jameson-Wolf

27-AspIleMetThrAspLysGlyLysTrpLysLeuGluThr-39
 44-LeuAsnSerGluAsnAsnArgAlaGluLeu-53
 71-ThrGluIleGlnGluAsnGlySerAsnThr-80
 95-GlyAsnThrAspIleTyrGlySerGlySer-104
 108-HisGluGluArgLysLeuAspGlyAsnGlyLysThrArgAsnLysArgMetSerAsp-126
 135-PheLeuLysAspAspLysAsnProAla-143
 151-ThrValTyrGluLysSerArgAsnLysAlaSerSerGlyLysSer-165
 187-TyrArgIleAsnGlySerLysThrLeuSerSerAsnThrLysTyrLysAlaGly-204
 217-AlaAsnAspArgIleSerLeuThrGlyGly-226
 231-GlyLysGlnProAspArgLeuAspGlyLysLysGluSerAlaArgAsnThrSerThr-249
 273-ValSerGlyGlnSerSerSerGluLeuLysPhe-283

Hydrophilic Regions - Hopp-Woods

27-AspIleMetThrAspLysGlyLysTrpLysLeu-37
 47-GluAsnAsnArgAlaGluLeu-53
 72-GluIleGlnGluAsnGlySerAsn-79
 108-HisGluGluArgLysLeuAspGlyAsnGlyLysThrArgAsnLysArgMetSerAsp-126
 135-PheLeuLysAspAspLysAsnPro-142
 151-ThrValTyrGluLysSerArgAsnLysAlaSerSerGly-163
 193-LysThrLeuSerSer-197
 199-ThrLysTyrLysAla-203
 217-AlaAsnAspArgIleSer-222
 232-LysGlnProAspArgLeuAspGlyLysLysGluSerAlaArgAsn-246
 277-SerSerSerGluLeuLysPhe-283

a588**AMPHI Regions - AMPHI**

52-GlnAspGlyArgAsnTyrThrGlySerPhe-61
 99-GlyThrPheLysLys-103

Antigenic Index - Jameson-Wolf

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25-SerTyrGlnGluProGlyCysThrTyrGluGlyAspValGlyLysAspGlyLysProAlaGlyLysGlyThrT
rpArgCysGlnAspGlyArgAsnTyrThrGlySerPheLysAsnGlyLysPheAspGlyGlnGly-70
80-IlePheIleGluProPheAsnSerAspSerThrLysPheArg-93
100-ThrPheLysLysGlyLeuAlaHisGlyArgPheThrValSerGlnAsnGlyGluThr-118
124-CysGluAsnGlyMetIleLysGluValLysLeuProLysAsnLys-138

Hydrophilic Regions - Hopp-Woods

33-TyrGluGlyAspValGlyLysAspGlyLysProAlaGly-45
47-GlyThrTrpArgCysGlnAspGlyArgAsnTyr-57
61-PheLysAsnGlyLysPheAspGly-68
85-PheAsnSerAspSerThrLysPheArg-93
100-ThrPheLysLysGlyLeuAla-106
124-CysGluAsnGlyMetIleLysGluValLysLeuProLysAsnLys-138

a589**AMPHI Regions - AMPHI**

18-AlaSerArgIleGluLysValLeu-25
54-ValAlaAspIleAlaLysIleIleGluLys-63
103-MetValGlyMetMet-107
128-LeuAlaSerValValGlnLeuTrp-135
155-MetAspValLeuValThrIle-161
198-PheValSerLeuGlyLysPheLeuGluHisArg-208
230-ValGlnArgAspGlyGlu-235
245-GlnIleGlyAspLeuIleArg-251
315-LeuGlyAspMetMetAsnAlaLeuSerGluAlaGln-326
330-AlaProIleAlaArgValAlaAspLys-338
349-GlyIleAlaLeuLeuThrPheIleAlaThr-358
396-MetGlyLysAlaVal-400
471-IleValSerAlaAlaGln-476
482-IleProThrAlaGln-486
502-GlyAlaGlyLeuValLys-507
539-LysProIleGlyAlaPheAlaLeuAlaAspAlaLeuLys-551
553-AspThrAlaGluAlaIleGlyArgLeu-561
603-GluValGlnLysLeuLysAlaAla-610
617-ValGlyAspGlyIleAsnAspAlaPro-625
640-AlaAspValAlaGluHisThr-646
653-GlnHisSerValAsnGlnLeuAlaAspAlaLeuSer-664
680-AlaPhePheTyrAsnIleLeu-686

Antigenic Index - Jameson-Wolf

1-MetGlnGlnLysValArgPheGlnIleGluGlyMetThr-13
17-CysAlaSerArgIleGluLysValLeuAsnLysLysAspPheValGluSer-33
39-AlaSerGluGluAlaGlnValValPheAspAspSerLysThrSerVal-54
59-LysIleIleGluLysThrGlyTyrGlyAlaLysGluLysThrGluAspThrLeuProGlnProGluAlaGluH
is-83
114-ThrArgHisAspTrp-118
148-IleLysGlyGlyLeu-152
205-LeuGluHisArgThrLysLysSerSerLeuAsn-215
228-ValAsnValGlnArgAspGlyGluTrpArg-237
253-AsnHisGlyGluArgIleAlaAla-260
262-GlyIleIleGluSerGlySerGlyTrpAlaAspGluSerHisLeuThrGlyGluSerAsnProGluGluLys
LysAlaGlyGly-289
298-ThrGluGlySerVal-302
323-SerGluAlaGlnGlySerLysAlaProIle-332
334-ArgValAlaAspLysAlaAla-340
361-IleLysGlyAspTrp-365

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396-MetGlyLysAlaValLys-401
 409-AlaAlaAlaMetGluGluAlaAlaHis-417
 422-ValLeuAspLysThrGlyThrLeuThrGluGlyLysProGlnVal-436
 443-ProAspSerGlyPheAspGluAspAlaLeu-452
 459-ValGluGlnAsnAla-463
 498-AlaGluValLysGlyAlaGlyLeu-505
 507-LysAlaGlyLysAlaGluPheAla-514
 520-LysPheSerAspGlyVal-525
 535-SerValAsnGlyLysProIle-541
 548-AspAlaLeuLysAlaAspThrAlaGluAlaIleGlyArgLeuLysLysHisAsnIle-566
 572-SerGlyAspAsnGlnGlyThrValGluTyrValAla-583
 593-GlyAsnMetSerProArgAspLysAlaAlaGluValGlnLysLeuLysAlaAlaGly-611
 617-ValGlyAspGlyIleAsnAspAla-624
 636-MetLysGlyGlyAlaAspValAlaGlu-644
 668-AlaThrLeuLysAsnIleLys-674
 715-AsnAlaLeuArgLeuLysArgValLysIleAsp-725

Hydrophilic Regions - Hopp-Woods

1-MetGlnGlnLysValArgPheGlnIle-9
 19-SerArgIleGluLysValLeuAsnLysLysAspPheValGlu-32
 39-AlaSerGluGluAlaGlnValValPheAspAspSerLysThrSerVal-54
 64-ThrGlyTyrGlyAlaLysGluLysThrGluAspThrLeuProGlnProGluAlaGluHis-83
 205-LeuGluHisArgThrLysLysSerSerLeu-214
 229-AsnValGlnArgAspGlyGluTrpArg-237
 253-AsnHisGlyGluArgIleAlaAla-260
 262-GlyIleIleGluSer-266
 270-TrpAlaAspGluSerHisLeuThrGlyGluSerAsnProGluGluLysLysAlaGlyGly-289
 323-SerGluAlaGlnGlySerLysAlaProIle-332
 334-ArgValAlaAspLysAlaAla-340
 409-AlaAlaAlaMetGluGluAlaAlaHis-417
 422-ValLeuAspLysThrGlyThr-428
 430-ThrGluGlyLysProGln-435
 445-SerGlyPheAspGluAspAlaLeu-452
 459-ValGluGlnAsnAla-463
 498-AlaGluValLysGly-502
 507-LysAlaGlyLysAlaGluPheAla-514
 548-AspAlaLeuLysAlaAspThrAlaGluAlaIleGlyArgLeuLysLysHisAsnIle-566
 573-GlyAspAsnGlnGly-577
 596-SerProArgAspLysAlaAlaGluValGlnLysLeuLysAlaAlaGly-611
 638-GlyGlyAlaAspValAlaGlu-644
 668-AlaThrLeuLysAsnIleLys-674
 717-LeuArgLeuLysArgValLysIleAsp-725

a590**AMPHI Regions - AMPHI**

77-TyrLeuProAspAsnLeuLysThrValLeuGluGlnProValThrLeuValAsnHisIleThrHis-98
 100-ProPheAlaGlyGlyPhe-105
 123-LysValLeuGluArgPhePhe-129
 132-GlnValProValSerLeu-137
 177-TyrGlnLysGlyPheLysSerTyrArgAsnGly-187
 214-ThrSerAspGlyIleAsnProLeu-221
 248-AsnGluLeuValAsnLeuVal-254
 331-LysArgLysPheAlaArgIle-337
 420-LysMetLeuGluAsp-424
 450-AspIleAsnGluThrLeuArgLeuMet-458
 460-AspSerThrValGln-464

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Antigenic Index - Jameson-Wolf

1-MetLysLysProLeu-5
 26-LysAlaGluGluSerLeuThrGlnGlnGlnLysIleLeuGln-39
 48-SerHisGlnTyrGluArgGlyTrpPheThrSerThrGluThrThrValIleArgLeuLysProGluLeu-70
 75-GlnLysTyrLeuProAspAsnLeuLysThrValLeu-86
 113-ThrGluPheLysTyrAlaProGluThrGluLysValLeuGlu-126
 128-PhePheGlyLysGlnVal-133
 144-AsnGlySerGlyLysMetGluVal-151
 157-AspTyrGluGluLeuSerGly-163
 175-ThrValTyrGlnLysGlyPheLysSerTyrArgAsnGlyTyrAspAlaPro-191
 196-LysLeuAlaAspLysGlyAspAlaAlaPheGlu-206
 208-ValHisPheAspSerGluThrSerAspGlyIleAsn-219
 233-PheSerLeuGluTrpLysGluGlyValAspTyr-243
 264-AsnProAsnGlySerIleAlaProSerLysIleGluValGly-277
 281-PheSerThrLysThrGlyGluSerGlyAla-290
 292-IleAspSerGluGlyGlnPheArgPhe-300
 305-TyrGlyAspGluLysTyrGlyPro-312
 330-LeuLysArgLysPheAlaArgIleSerAlaLysLysMetThrGluGluGlnIleArgAsnAspLeu-351
 355-ValLysGlyGluAlaSerGly-361
 366-AsnProValLeuAsp-370
 378-LeuProSerGlyLysIleAspValGlyGly-387
 389-IleMetPheLysAspMetLysLysGluAspLeuAsnGln-401
 406-LeuLysLysThrGluAlaAspIleArgMet-415
 437-AsnAlaGluAspGluAlaGluGlyArgAlaSerLeuAspAspIleAsnGluThrLeu-455
 466-MetAlaArgGluLysTyr-471
 475-AsnGlyAspGlnIleAsp-480
 485-LeuLysAsnAsnGlnLeuLysLeuAsnGlyLysThrLeuGlnAsnGluProGluProAspPheAspGluGly
 GlyMetValSerGluProGlnGln-516

Hydrophilic Regions - Hopp-Woods

1-MetLysLysProLeu-5
 26-LysAlaGluGluSerLeuThrGln-33
 62-ThrValIleArgLeuLysProGluLeu-70
 77-TyrLeuProAspAsnLeuLysThrValLeu-86
 113-ThrGluPheLysTyrAlaProGluThrGluLysValLeuGlu-126
 147-GlyLysMetGluVal-151
 157-AspTyrGluGluLeuSerGly-163
 180-GlyPheLysSerTyrArgAsnGlyTyr-188
 196-LysLeuAlaAspLysGlyAspAlaAlaPheGlu-206
 208-ValHisPheAspSerGluThrSerAspGly-217
 233-PheSerLeuGluTrpLysGluGlyValAspTyr-243
 272-SerLysIleGluValGly-277
 292-IleAspSerGluGlyGlnPhe-298
 306-GlyAspGluLysTyrGlyPro-312
 330-LeuLysArgLysPheAlaArgIleSerAlaLysLysMetThrGluGluGlnIleArgAsnAspLeu-351
 355-ValLysGlyGluAla-359
 381-GlyLysIleAspValGlyGly-387
 389-IleMetPheLysAspMetLysLysGluAspLeuAsn-400
 406-LeuLysLysThrGluAlaAspIleArgMet-415
 437-AsnAlaGluAspGluAlaGluGlyArgAlaSerLeuAspAspIleAsnGluThrLeu-455
 466-MetAlaArgGluLysTyr-471
 486-LysAsnAsnGlnLeuLysLeuAsnGly-494
 496-ThrLeuGlnAsnGluProGluProAspPheAspGluGlyGlyMetValSerGluProGlnGln-516

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AMPHI Regions - AMPHI

6-AlaPheIlePheAla-10
17-LeuHisGluPheGlyHisTyrIleValAla-26
61-LeuGlyGlyTyrValLysMetValAsp-69
143-GlyAspLysIleGlnSerValAsnGlyThrProValAlaAspTrp-157
181-SerGlyAlaGlnThrValArgThrIleAspAlaAlaGlyThrProGluAlaGlyLysIleAlaLys-202
218-AlaGlyGlyValGluLys-223
234-ProGlyAspArgLeu-238
245-ProIleAlaSerTrpGlnGluTrpAlaAsnLeuThrArg-257
304-AlaTrpAspAlaGlnIleArg-310
313-TyrArgProSerValValArgAlaPheGly-322
324-GlyTrpGluLysThrValSerHis-331
335-ThrLeuLysPhePheGlyLysLeuIle-343
351-HisIleSerGlyProLeuThrIleAla-359
373-TyrLeuGluPheLeuAlaLeu-379

Antigenic Index - Jameson-Wolf

44-PhePheThrArgLysArgGlyAspThrGlu-53
68-ValAspThrArgGluGlyGluValSerGluAlaAspLeu-80
84-PheAspLysGlnHisProAlaLysArg-92
129-ValGluProAspThrIleAla-135
139-GlyPheGlnSerGlyAspLysIleGlnSer-148
157-TrpGlySerAlaGln-161
187-ArgThrIleAspAlaAlaGlyThrProGluAlaGlyLysIleAlaLysAsnGlnGly-205
219-GlyGlyValGluLysGlySerProAlaGluLysAlaGlyLeuLysProGlyAspArgLeuThrAlaAlaAspGlyLysProIle-246
254-AsnLeuThrArgGlnSerProGlyLysLysIle-264
268-TyrGluArgAlaGlyGlnThrHisThrAlaAspIleArgProAspThrValGluGlnProAspHisThrLeu-291
295-ValGlyLeuArgProGlnProAspArgAlaTrp-305
307-AlaGlnIleArgArgSerTyrArgProSerVal-317
327-LysThrValSerHisSer-332
343-IleSerGlyAsnAla-347
362-AlaGlyGlnSerAla-366
408-IleArgGlyLysProLeuGlyGluArgValGln-418

Hydrophilic Regions - Hopp-Woods

44-PhePheThrArgLysArgGlyAspThr-52
68-ValAspThrArgGluGlyGluValSerGluAlaAspLeu-80
84-PheAspLysGlnHisProAlaLysArg-92
129-ValGluProAspThrIleAla-135
139-GlyPheGlnSerGlyAspLysIleGlnSer-148
193-GlyThrProGluAlaGlyLysIleAlaLys-202
220-GlyValGluLysGlySerProAlaGluLysAlaGlyLeuLysProGlyAspArgLeuThrAlaAlaAspGlyLysPro-245
256-ThrArgGlnSerProGlyLysLysIle-264
268-TyrGluArgAlaGlyGln-273
277-AlaAspIleArgProAspThrValGluGlnProAsp-288
299-ProGlnProAspArgAlaTrp-305
308-GlnIleArgArgSerTyrArg-314
362-AlaGlyGlnSerAla-366
411-LysProLeuGlyGluArgValGln-418

a592**AMPHI Regions - AMPHI**

6-PheGlyGlnIlePheSer-11

-529-

21-GlyGlyLeuLeuGlyGlyLeuIle-28
 50-AlaProAsnAlaAlaAlaAla-57
 65-GlnGlyMetIleGlnMetLeuGlyValPheValAsp-76
 94-ProTyrGlyAspLeu-98
 109-ValSerGlnValGlyGlnTrp-115
 153-ThrAlaValPheArgMet-158
 165-TyrPheGlyAlaValAla-170
 185-IleMetAlaTrpIleAsnLeuValAlaIleLeuLeuLeuSer-198

Antigenic Index - Jameson-Wolf

35-GlyIleLysArgGlyLeuTyrSerAsnGluAlaGlyMetGlySerAlaProAsnAla-53
 57-AlaGluValLysHisProValSer-64
 93-GlnProTyrGlyAspLeuSerGly-100
 137-AlaTyrAlaGluSerAsnVal-143
 206-ArgAspTyrThrAlaLysLeuLysMetGlyLysAspProGluPheLysLeuSerGluHisProGlyLeuLys
 ArgArgIleLysSerAspValTrp-237

Hydrophilic Regions - Hopp-Woods

35-GlyIleLysArgGlyLeuTyr-41
 57-AlaGluValLysHisProVal-63
 212-LeuLysMetGlyLysAspProGluPheLysLeuSerGlu-224
 226-ProGlyLeuLysArgArgIleLysSer-234

a593**AMPHI Regions** - AMPHI

6-GlyLeuCysLysArgPheGlyGlyLysThr-15
 41-SerThrLeuLeuAsnMetIleAlaGlyIleValArg-52
 87-HisMetSerAlaLeuGlu-92
 102-LysMetProLysAla-106
 125-AlaHisArgLysProXxxLysLeuSerGlyGlyGlu-136
 159-PheSerSerLeuAsp-163
 165-HisLeuArgAspArgLeuArgArgMet-173
 213-CysGlyThrProGluThrLeuValGlnThrProAlaGlyValGlnValAlaHisLeuMetGly-233

Antigenic Index - Jameson-Wolf

6-GlyLeuCysLysArgPheGlyGlyLysThrValAlaAsp-18
 24-ValGlyArgGlyLysIle-29
 33-LeuGlyArgSerGlyCysGlyLysSerThr-42
 50-IleValArgProAspGlyGlyGlu-57
 61-AsnGlyGluAsnIleThrArgMetProProGluLysArgArgIle-75
 99-LysMetGlnLysMetProLysAlaGluAlaGluSer-110
 119-ValGlyLeuGluAsnGluAlaHisArgLysProXxxLysLeuSerGlyGlyGluLysGlnArgLeuAlaLeu
 -142
 157-GluSerPheSerSerLeu-162
 164-ThrHisLeuArgAspArgLeuArgArgMetThrAlaGluArgIleArgLysGlyGlyIle-183
 190-HisSerProGluGluAlaCysThrAlaAlaAspGluIleAlaVal-204
 206-HisGluGlyLysIleLeuGlnCysGlyThrProGluThrLeu-219
 233-GlyLeuProAsnThrAspAspAspArgHisIle-243
 248-ValArgPheAspGlnAspGlyMetGluCysArgValLeuSer-261
 263-ThrCysLeuProGluSer-268
 291-GlyGluIleSerGlyAsnAspThrValArgIleHisIleGluAspArgGluIleValArgPheArg-312

Hydrophilic Regions - Hopp-Woods

6-GlyLeuCysLysArgPheGlyGly-13
 25-GlyArgGlyLysIle-29
 36-SerGlyCysGlyLys-40

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51-ValArgProAspGlyGly-56
 68-MetProProGluLysArgArgIle-75
 99-LysMetGlnLysMetProLysAlaGluAlaGluSer-110
 119-ValGlyLeuGluAsnGluAlaHisArgLysProXxxLysLeuSerGlyGlyGluLysGlnArgLeuAlaLeu-142
 164-ThrHisLeuArgAspArgLeuArgArgMetThrAlaGluArgIleArgLysGlyGly-182
 191-SerProGluGluAlaCysThrAlaAlaAspGluIleAlaVal-204
 206-HisGluGlyLysIle-210
 236-AsnThrAspAspAspArgHisIle-243
 248-ValArgPheAspGlnAspGlyMetGluCysArgValLeuSer-261
 291-GlyGluIleSerGly-295
 297-AspThrValArgIleHisIleGluAspArgGluIleValArgPheArg-312

a594**AMPHI Regions** - AMPHI

21-SerIleLeuArgLeu-25
 108-AlaGlyArgGluCysGlnGluThrAlaAlaAla-118
 138-AlaIleLysArgCysAsn-143

Antigenic Index - Jameson-Wolf

1-MetGlyAlaAspThrAspGlyAspLysAspValArgLeuAsnArgThr-16
 51-ValGluHisProAsnArgPhe-57
 75-HisLeuAspGlySerThrGlyGly-82
 86-PheArgArgGluLysThrGlyHisLysArgArgCysHisThrGlnCys-101
 103-HisSerAlaArgAlaAlaGlyArgGluCysGlnGluThr-115
 137-ArgAlaIleLysArgCysAsn-143

Hydrophilic Regions - Hopp-Woods

1-MetGlyAlaAspThrAspGlyAspLysAspValArgLeuAsnArg-15
 86-PheArgArgGluLysThrGlyHisLysArgArgCysHis-98
 105-AlaArgAlaAlaGlyArgGluCysGlnGluThr-115
 137-ArgAlaIleLysArgCysAsn-143

a595**AMPHI Regions** - AMPHI

20-CysGlnProProGluAla-25
 140-AlaAspLeuGluLysLeuSerGlnProLeuAla-150
 157-GlnGlyGluValLysGluLeuVal-164
 169-ThrPheThrGluAlaValLysAlaGlyAspIleGluLysAla-182
 196-IleGluProIleAlaGluLeuPheSerGluLeuAspPro-208
 224-AlaGlyPheThrGlyPheHisArg-231
 243-SerGlyValLysGluIleAlaAlaLysLeuMetThrAspValGluAlaLeuGlnLysGluIleAsp-264
 274-ValGlyGlyAlaSerGluLeuIleGluGluValAlaGly-286
 309-AspGlySerLysLysIleValAspLeuPheArgProLeu-321
 337-PheLysGlnValAsnGluIleLeuAlaLys-346
 351-AspGlyPheGluThrTyrAspLysLeuGlyGlu-361
 366-AlaLeuGlnAlaSerIleAsnAlaLeuAlaGluAspLeuAlaGlnLeuArgGlyIleLeuGlyLeu-387

Antigenic Index - Jameson-Wolf

1-MetArgLysPheAsn-5
 21-GlnProProGluAlaGluLysAlaAlaPro-30
 32-AlaSerGlyGluAlaGlnThrAlaAsnGluGlyGlySer-44
 50-AsnAspAsnAlaCysGluProMetGlu-58
 70-IleLysAsnAsnSerGlyArgLysLeuGluTrpGluIle-82
 87-MetValValAspGluArgGluAsnIleAla-96
 98-GlyLeuSerAspLysMetThr-104
 108-LeuProGlyGluTyrGluMet-114

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120-ThrAsnProArgGlyLysLeuValValThrAspSerGlyPheLysAspThrAlaAsnGluAlaAspLeuGlu
LysLeuSer-146
158-GlyGluValLysGluLeuValAlaLysThrLysThrPheThrGluAlaValLysAlaGlyAspIleGluLys
AlaLysSerLeuPheAla-187
189-ThrArgValHisTyrGluArgIleGluProIle-199
204-SerGluLeuAspProValIleAspAlaArgGluAspAspPheLysAspGlyAlaLysAspAlaGly-225
238-ValGluLysAspValSerGlyValLysGluIleAlaAla-250
252-LeuMetThrAspValGluAlaLeuGlnLysGluIleAsp-264
269-ProProGlyLysValValGlyGlyAla-277
279-GluLeuIleGluGluValAlaGlySerLysIleSerGlyGluGluAspArgTyrSerHisThrAspLeuSer
AspPheGlnAlaAsnValAspGlySerLysLysIleValAsp-316
322-IleGluThrLysAsnLysAlaLeuLeuGluLysThrAspThrAsnPheLysGlnValAsn-341
345-AlaLysTyrArgThrLysAspGlyPheGluThrTyrAspLysLeuGlyGluAlaAspArgLysAlaLeu-36
7
374-LeuAlaGluAspLeuAlaGln-380

Hydrophilic Regions - Hopp-Woods

1-MetArgLysPheAsn-5
21-GlnProProGluAlaGluLysAlaAlaPro-30
32-AlaSerGlyGluAlaGlnThrAlaAsnGluGlyGlySer-44
52-AsnAlaCysGluProMetGlu-58
72-AsnAsnSerGlyArgLysLeuGluTrpGluIle-82
87-MetValValAspGluArgGluAsnIle-95
99-LeuSerAspLysMetThr-104
110-GlyGluTyrGluMet-114
122-ProArgGlyLysLeuValVal-128
131-SerGlyPheLysAspThrAlaAsnGluAlaAspLeuGluLysLeuSer-146
158-GlyGluValLysGluLeuValAlaLysThrLysThrPheThrGluAlaValLysAlaGlyAspIleGluLys
AlaLysSerLeuPheAla-187
189-ThrArgValHisTyrGluArgIleGluProIle-199
204-SerGluLeuAspProValIleAspAlaArgGluAspAspPheLysAspGlyAlaLysAspAlaGly-225
238-ValGluLysAspValSerGlyValLysGluIleAlaAla-250
252-LeuMetThrAspValGluAlaLeuGlnLysGluIleAsp-264
279-GluLeuIleGluGluValAlaGly-286
288-LysIleSerGlyGluGluAspArgTyrSerHis-298
308-ValAspGlySerLysLysIleValAsp-316
322-IleGluThrLysAsnLysAlaLeuLeuGluLysThrAspThrAsnPhe-337
347-TyrArgThrLysAspGlyPheGluThrTyrAspLysLeuGlyGluAlaAspArgLysAlaLeu-367
374-LeuAlaGluAspLeuAlaGln-380

a596**AMPHI Regions - AMPHI**

9-MetLeuArgValSerLysValVal-16
50-LeuArgIleMetAlaGlyValAspLys-58
87-ValArgGluGluValGluSerGlyLeuGlyGluValAlaAlaAlaGlnLysArgLeuGluGluValTyrAlaG
luTyr-112
192-ProThrAsnHisLeuAsp-197
202-GluTrpLeuGluGlnPheLeuValArgPheProGly-213
295-AlaArgPheGluGluMetSerAsnTyr-303
322-LeuGlyAsnGluValIleGluPheValAsnValSerLysSerPhe-336
366-SerThrLeuPheLysMet-371
409-AspAsnIleAlaGlu-413
444-IleThrGlyGlnLeuSer-449
483-LeuArgAlaLeuGluAspAlaLeuLeuGluPheAla-494

Antigenic Index - Jameson-Wolf

-532-

16-ValProProGlnLysThrIleIleLysAspIleSer-27
 41-LeuAsnGlyAlaGlyLysSerThrVal-49
 54-AlaGlyValAspLysGluPheGluGlyGluAla-64
 75-LeuProGlnGluProGluLeuAspProGluLysThrValArgGluGluValGluSerGlyLeu-95
 99-AlaAlaAlaGlnLysArgLeuGluGluValTyr-109
 112-TyrAlaAsnProAspAlaAspPheAspAlaLeuAlaGluGluGlnGlyArgLeuGlu-130
 136-GlySerSerThrGlyGlyGlyAlaGluHisGluLeuGluIleAlaAlaAspAlaLeuArg-155
 157-ProGluTrpAspAlaLysIleAspAsnLeuSerGlyGlyGluLysArgArgValAla-175
 181-LeuSerLysProAspMet-186
 190-AspGluProThrAsnHisLeuAspAlaGluSer-200
 219-ThrHisAspArgTyrPhe-224
 233-LeuGluLeuAspArgGlyHisGlyIleProTrpLysGlyAsnTyrSerSer-249
 251-LeuGluGlnLysGluLysArgLeuGluAsnGluAlaLysSerGluAlaAlaArgValLysAlaMetLysGln
 GluLeuGluTrp-278
 280-ArgGlnAsnAlaLysGlyArgGlnAlaLysSerLysAlaArgLeuAlaArgPheGluGluMetSerAsnTyr
 GluTyrGlnLysArgAsnGluThrGlnGlu-313
 319-AlaGluArgLeuGlyAsnGluVal-326
 333-SerLysSerPheGlyAsp-338
 359-GlyProAsnGlyAlaGlyLysSerThrLeu-368
 373-AlaGlyLysGluGlnProAspSerGlyGluValLysIle-385
 395-AspGlnSerArgGluGlyLeuGlnAsnAspLysThrValPhe-408
 411-IleAlaGluGlyArgAspIleLeu-418
 421-GlyGlnPheGluIleProAlaArgGlnTyrLeuGlyArgPheAsnPheLysGlySerAspGlnSerLysIle
 -444
 446-GlyGlnLeuSerGlyGlyGluArgGlyArgLeuHisLeu-458
 462-LeuLeuGlyGlyGlyAsn-467
 471-LeuAspGluProSerAsnAspLeuAspValGluThr-482
 501-SerHisAspArgTrpPhe-506
 516-AlaCysGluGlyAspSerLysTrp-523
 526-PheAspGlyAsnTyrGlnGluTyrGluAlaAspLysLysArgArgLeuGlyGluGluGlyThrLysProLys
 ArgIleLysTyrLysProValThrArg-558

Hydrophilic Regions - Hopp-Woods

54-AlaGlyValAspLysGluPheGluGlyGluAla-64
 77-GlnGluProGluLeuAspProGluLysThrValArgGluGluValGluSerGlyLeu-95
 99-AlaAlaAlaGlnLysArgLeuGluGluValTyr-109
 113-AlaAsnProAspAlaAspPheAspAlaLeuAlaGluGluGlnGlyArgLeuGlu-130
 141-GlyGlyAlaGluHisGluLeuGluIleAlaAlaAspAlaLeuArg-155
 157-ProGluTrpAspAlaLysIleAspAsn-165
 167-SerGlyGlyGluLysArgArgValAla-175
 181-LeuSerLysProAsp-185
 190-AspGluProThrAsnHisLeuAspAlaGluSer-200
 233-LeuGluLeuAspArgGlyHis-239
 251-LeuGluGlnLysGluLysArgLeuGluAsnGluAlaLysSerGluAlaAlaArgValLysAlaMetLysGln
 GluLeuGluTrp-278
 280-ArgGlnAsnAlaLysGlyArgGlnAlaLysSerLysAlaArgLeuAlaArgPheGluGluMetSerAsn-30
 2
 304-GluTyrGlnLysArgAsnGluThrGln-312
 319-AlaGluArgLeuGlyAsnGluVal-326
 373-AlaGlyLysGluGlnProAspSerGlyGluValLysIle-385
 395-AspGlnSerArgGluGlyLeuGlnAsnAspLysThrValPhe-408
 411-IleAlaGluGlyArgAspIleLeu-418
 435-AsnPheLysGlySerAspGlnSerLysIle-444
 449-SerGlyGlyGluArgGlyArgLeuHisLeu-458
 472-AspGluProSerAsnAspLeuAspValGluThr-482

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517-CysGluGlyAspSer-521

529-AsnTyrGlnGluTyrGluAlaAspLysLysArgArgLeuGlyGluGluGlyThrLysProLysArgIleLys
Tyr-553**a597****AMPHI Regions - AMPHI**

6-SerAsnSerLeuLysGlnLeuGlnGlu-14

45-TrpAspLysPheGlnLysLeu-51

68-GlnIleSerArgPheValSerGly-75

101-LeuArgTyrThrArgTyrValAsnAla-109

111-AsnArgGluValValLysAspLeuGluLysGlnGln-122

132-IleAsnAsnGluLeuAlaArgLeuLysLys-141

144-AlaAsnValGlnSerLeu-149

157-AspAlaAlaGluGlnThrGlu-163

169-AlaLysIleAlaLysAspAlaArg-176

189-AsnLysLeuLeuSer-193

253-ProSerValMetGlyIleGlySerAlaAspGlyPheSerArgMetGlnGlyArgLeuLysLysProValAsp
GlyValProThrGly-281

302-ProAlThrValGluSerIleAla-309

314-SerTyrAlaAspGluLeuAspGlyTyrGlyLys-324

336-SerIleTyrAlaGlyLeu-341

Antigenic Index - Jameson-Wolf7-AsnSerLeuLysGlnLeuGlnGluGluArgIleArgGlnGluArgIleArgGlnGluArgIleArgGlnAlaAr
gGlyAsnLeu-3436-SerValAsnArgLysGlnArgGluAlaTrpAspLysPheGlnLysLeuAsnThrGluLeuAsnArgLeuLysT
hrGluValAlaAla-64

74-SerGlyAsnTyrLysAsnSerGlnProAsn-83

91-AsnAlaGluProGlyGlnLysAsnArgPhe-100

107-ValAsnAlaSerAsnArgGluValValLysAspLeuGluLysGlnGlnLys-123

128-GlnGluGlnLysIleAsnAsnGluLeuAlaArgLeuLysLysIleGln-143

149-LeuLeuLysLysGlnGlyValThrAspAlaAlaGluGlnThrGluSerArgArgGlnAsnAlaLysIleAla
LysAspAlaArgLysLeuLeuGluGlnLysGlyAsnGluGlnGlnLeu-188191-LeuLeuSerAsnLeuGluLysLysLysAlaGluHisArgIleGlnAspAlaGluAlaLysArgLysLeuAla
GluAlaArgLeuAlaAlaAlaGluLysAlaArgLysGluAlaAlaGlnGlnLysAlaGluAlaArgArgAlaGluM
etSerAsnLeuThrAlaGluAspArgAsnIleGlnAlaProSer-254

259-GlySerAlaAspGlyPheSerArgMetGlnGlyArgLeuLysLysProValAspGlyValProThr-280

284-GlyGlnAsnArgSerGlyGlyAspVal-292

314-SerTyrAlaAspGluLeuAspGlyTyrGly-323

329-AspHisGlyGluAsnTyr-334

345-SerValGlyLysGlyTyr-350

354-AlaGlySerLysIleGlySerSerGlySerLeuProAspGlyGluGluGlyLeu-371

381-ValLeuAsnProSerSerTrp-387

Hydrophilic Regions - Hopp-Woods7-AsnSerLeuLysGlnLeuGlnGluGluArgIleArgGlnGluArgIleArgGlnGluArgIleArgGlnAlaAr
gGlyAsn-3337-ValAsnArgLysGlnArgGluAlaTrpAspLysPheGlnLysLeuAsnThrGluLeuAsnArgLeuLysThrG
luValAlaAla-64

77-TyrLysAsnSerGln-81

91-AsnAlaGluProGlyGlnLysAsnArgPhe-100

110-SerAsnArgGluValValLysAspLeuGluLysGlnGlnLys-123

128-GlnGluGlnLysIleAsnAsnGluLeuAlaArgLeuLysLysIleGln-143

149-LeuLeuLysLysGlnGlyValThrAspAlaAlaGluGlnThrGluSerArgArgGlnAsnAlaLysIleAla
LysAspAlaArgLysLeuLeuGluGlnLysGlyAsnGluGlnGlnLeu-188

-534-

193-SerAsnLeuGluLysLysLysAlaGluHisArgIleGlnAspAlaGluAlaLysArgLysLeuAlaGluAla
 ArgLeuAlaAlaAlaGluLysAlaArgLysGluAlaAlaGlnGlnLysAlaGluAlaArgArgAlaGluMet-240
 244-ThrAlaGluAspArgAsnIleGln-251
 267-MetGlnGlyArgLeuLysLysProValAsp-276
 286-AsnArgSerGlyGlyAspVal-292
 315-TyrAlaAspGluLeuAspGlyTyrGly-323
 356-SerLysIleGlySer-360
 363-SerLeuProAspGlyGluGluGlyLeu-371
a601

AMPHI Regions - AMPHI

7-LeuValAspGluIleAspValProAsnIleGlyArg-18
 26-AlaGlyIleProThrValPhe-32
 42-GlyLysGluLeuGlnAspAspIleAsnAsnAspAlaAlaAlaLeuGluLysPheGluLysIleArgAlaTyrG
 lyAlaLeu-68
 70-MetGlyLeuIleSerAspValSerGluAlaAla-80
 100-SerSerGlyLysThrValAsn-106
 137-AlaAlaAlaValProGlyThrLeuValAsnLeuAlaAla-149
 169-GlyAlaAlaAlaGlu-173

Antigenic Index - Jameson-Wolf

3-ProThrGlyAsnLeuValAspGluIleAspValProAsnIleGlyArgLeuLys-20
 39-GlyTyrThrGlyLysGluLeuGlnAspAspIleAsnAsnAspAlaAlaAlaLeuGluLysPheGluLysIleA
 rgAla-64
 75-AspValSerGluAlaAlaAlaArgAlaHisThrPro-86
 97-TyrThrAlaSerSerGlyLysThrValAsn-106
 149-AlaGlyGlyGlyThrArgLysGluValArgPheGlyHisProSerGlyThrLeuArg-167
 172-AlaGluCysGlnAspGlyGln-178
 185-ValMetSerArgSerAlaArgValMet-193
 198-ValArgValProGluAspCysPhe-205

Hydrophilic Regions - Hopp-Woods

7-LeuValAspGluIleAspVal-13
 40-TyrThrGlyLysGluLeuGlnAspAspIleAsnAsnAspAlaAlaAlaLeuGluLysPheGluLysIleArgA
 la-64
 75-AspValSerGluAlaAlaAlaArgAlaHisThr-85
 99-AlaSerSerGlyLysThrValAsn-106
 151-GlyGlyThrArgLysGluValArgPhe-159
 172-AlaGluCysGlnAsp-176
 188-ArgSerAlaArgValMet-193
 200-ValProGluAspCysPhe-205
a602

AMPHI Regions - AMPHI

7-AspLysAlaArgHis-11
 21-ValAsnArgHisGlyGln-26
 54-ArgGlnIleAlaGlnIle-59
 61-AlaGlyLeuHisValCysAsnSerVal-69
 78-HisValIleValGluMetCysAlaTrpTyr-87

Antigenic Index - Jameson-Wolf

5-GlnCysAspLysAlaArgHisMetArg-13
 20-GlnValAsnArgHisGlyGlnThrGlyAsnCysGly-31
 36-CysSerLeuGlnGlyAsnArgLysAlaGlnValPheAspThrAspLeuIleAspArgGlnIle-56
 90-SerThrGlyGluTyr-94

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99-GlnMetArgAspTyrIle-104

Hydrophilic Regions - Hopp-Woods

5-GlnCysAspLysAlaArgHisMetArg-13

20-GlnValAsnArgHisGlyGln-26

39-GlnGlyAsnArgLysAlaGlnValPheAsp-48

50-AspLeuIleAspArgGlnIle-56

a603**AMPHI Regions - AMPHI**

158-ValMetAspGluLeuAsnAlaCysIlePro-167

172-HisAsnProAlaAsnIleSerGlyIleLeuAla-182

186-HisPheProGlyLeuProAsnValGly-194

199-SerPheHisGlnThrMetPro-205

212-AlaValProArgGluLeu-217

245-GlyLysProLeuGluAspIleArgMetIleIleAlaHis-257

260-AsnGlyAlaSerIleThrAlaIleLysAsnGlyLysSerVal-273

280-ThrProIleGluGly-284

299-TyrSerTyrLeuThrSer-304

324-LeuGlyIleSerGlu-328

330-SerAsnAspCysArg-334

357-ArgLeuAlaLysTyrIleAlaSerMet-365

393-ValSerTyrLeuAsp-397

Antigenic Index - Jameson-Wolf

1-LeuSerSerArgArgArgGlyArgAsnAsnAspArgLysCysGlyIle-16

18-PheAlaGlnArgGlyArgLeuLysHisThrProProAsnAlaHisProPheSerAspAspProThrXxxLysLysGlnProGlnThrThrArgArgAsnIleMetSer-53

63-GlySerSerSerLeuLysGlyAlaValIleAspArgLysSerGlySer-78

84-LeuGlyGluArgLeuThrThrProGluAla-93

96-ThrPheSerLysAspGlyAsnLysArgGlnValProLeuSerGlyArgAsnCysHis-114

124-GluLeuGluLysHisGluLeuHisAspArgIleGln-135

142-AlaHisGlyGlyGluLysTyrSerGlu-150

157-AlaValMetAspGluLeuAsn-163

203-ThrMetProGluArgAlaTyr-209

215-ArgGluLeuArgLysLysTyrAlaPheArgArgTyrGlyPheHisGlyThrSerMetArg-234

246-LysProLeuGluAspIleArg-252

258-LeuGlyAsnGlyAla-262

265-ThrAlaIleLysAsnGlyLysSerValAspThrSerMetGly-278

289-ThrArgCysGlyAspIleAspProGlyVal-298

311-AlaGlnValAspGluMetLeuAsnLysLysSerGly-322

327-SerGluLeuSerAsnAspCysArgThrLeuGluIleAlaAlaAspGluGlyHisGluGlyAlaArgLeu-349

380-GlyIleGlyGluAsnSerArgAsnIleArgAlaLysThr-392

403-IleAspThrLysAlaAsnMetGluLysArgTyrGlyAsnSerGlyIle-418

420-SerProThrAspSerSerPro-426

432-ProThrAsnGluGluLeu-437

Hydrophilic Regions - Hopp-Woods

1-LeuSerSerArgArgArgGlyArgAsnAsnAspArgLysCysGlyIle-16

18-PheAlaGlnArgGlyArgLeuLysHisThrPro-28

34-PheSerAspAspProThrXxxLysLysGlnProGlnThrThrArgArgAsnIleMet-52

70-AlaValIleAspArgLysSerGly-77

84-LeuGlyGluArgLeuThrThr-90

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97-PheSerLysAspGlyAsnLysArgGlnValProLeuSerGlyArgAsnCysHis-114
 124-GluLeuGluLysHisGluLeuHisAspArgIleGln-135
 143-HisGlyGlyGluLysTyrSerGlu-150
 157-AlaValMetAspGluLeuAsn-163
 204-MetProGluArgAlaTyr-209
 215-ArgGluLeuArgLysLysTyrAlaPhe-223
 246-LysProLeuGluAspIleArg-252
 268-LysAsnGlyLysSerValAspThr-275
 290-ArgCysGlyAspIleAspPro-296
 311-AlaGlnValAspGluMetLeuAsnLysLysSerGly-322
 328-GluLeuSerAsnAspCysArgThrLeuGluIleAlaAlaAspGluGlyHisGluGlyAlaArgLeu-349
 381-IleGlyGluAsnSerArgAsnIleArgAlaLysThr-392
 403-IleAspThrLysAlaAsnMetGluLysArgTyrGly-414
 433-ThrAsnGluGluLeu-437
a604

AMPHI Regions - AMPHI

36-HisArgValValGlnPheAla-42
 53-ValGlyGlyIleHisGlyPheAlaThr-61
 78-ValArgAlaGlyGlySerPhe-84
 95-ArgThrValSerAlaAspPheLeuGluPhePheGlnSerCysGlyIle-110
 114-ValValLeuGlnLeuPheAlaArgValAlaGlnValGlyGlyIleGlnGluAsn-131
 148-ArgHisIleAsnPheIleAspGlnIleAlaGlyTrpGlu-160
 166-ValGlyTrpIleLysLysPheAsp-173
 191-PheGlnAsnCysAlaValLeuHisArg-199

Antigenic Index - Jameson-Wolf

11-AlaAlaCysGlyLysValAspGlnArgThrGlyHisGlyGlyGlyGlyArgAsnGlyAsnArgGlyGlyThrHis-35
 67-GlyGlyGlyArgAspGluGlyAspPheArgArgValArgAlaGlyGlySerPhe-84
 127-GlyIleGlnGluAsnGlyArgAsnAlaArgValAspGluArgGlyPheGln-143
 175-TyrPheGlyCysArgGluArgTyrAlaVal-184
 201-MetGlyAsnAsnGly-205
 211-LeuProAspPheAspCysAlaAsp-218

Hydrophilic Regions - Hopp-Woods

14-GlyLysValAspGlnArgThrGlyHis-22
 24-GlyGlyGlyArgAsnGlyAsnArgGlyGlyThrHis-35
 68-GlyGlyArgAspGluGlyAspPheArgArgValArgAla-80
 127-GlyIleGlnGluAsnGlyArgAsnAlaArgValAspGluArgGlyPhe-142
 178-CysArgGluArgTyrAlaVal-184
 214-PheAspCysAlaAsp-218
a605

AMPHI Regions - AMPHI

13-ArgGlnIleTrpLysIleAlaAsp-20
 38-ThrLeuPheTyrArgPheIleSerGluAsnPheThrAspTyrMetGln-53
 107-LysLeuLysGluIlePheThrAlaIle-115
 128-IleLysGlyLeuPheAspAspPheAsp-136
 141-ArgLeuGlySerThr-145
 155-AlaValLeuLysGlyValAlaGluLeu-163
 173-IleAspLeuPheGlyAspAlaTyrGluTyrLeuIleSerAsn-186
 188-AlaAlaAsnAlaGlyLys-193
 204-ValSerLysLeuIleAlaArg-210
 217-GluLysValAsnLysIleTyrAspPro-225

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240-PheAspGluHisIle-244
291-AspSerLysProPheAspAlaValValSerAsn-301
341-HisAlaLeuAsnTyr-345
355-ValSerPheProGly-359
433-GluHisIleAlaGluIleValLysLeuPheAla-443
452-AlaGlnAsnAlaAlaGlnGlnThr-459
471-SerTyrValGluProGlu-476
478-ThrArgGluIleIleAspIle-484
489-AlaGluIleSerGluThrValAlaLysIleGluArgLeuArgArgGluIleAspGluValIleAlaGluIle
Glu-513

Antigenic Index - Jameson-Wolf

5-IleGlnGlnArgAlaGlnLeu-11
18-IleAlaAspGluValArgGlyAlaValAspGlyTrpAsp-30
44-IleSerGluAsnPheThrAspTyrMetGlnAlaGlyAspSerSerIleAsp-60
63-AlaMetProAspSer-67
71-ProGluIleLysAspAspAlaValLysVal-80
98-AlaHisGlnAsnGluGluLeuAsnThrLysLeuLysGlu-110
116-GluSerSerAlaSerGlyTyrProSerGluGlnAspIleLysGlyLeuPheAspAspPheAspThrThrSer
SerArgLeu-142
146-ValAlaAspLysAsnLysArgLeu-153
164-AspPheGlySerPheGluAspHisHis-172
190-AsnAlaGlyLysSerGlyGlyGluPhePheThr-200
215-GlyGlnGluLysValAsnLysIleTyrAspProAlaCysGlySerGlySer-231
235-GlnAlaLysLysGlnPheAsp-241
253-GluIleAsnHisThrThrTyrAsn-260
280-LeuGlyAspThrLeuThrAsnProLysLeuLysAspSerLysProPheAspAla-297
310-GlySerGlyAspProThrLeuIleAsnAspAspArgPheAlaPro-324
330-ProLysSerLysAlaAsp-335
345-TyrLeuSerGlyArgGlyArgAlaAla-353
362-TyrArgGlyGlyAlaGluGlnLysIleArg-371
403-LeuSerLysHisLysAspAsnThrAsp-411
418-GlyGlyPhePheLysLysGluThrAsnAsnAsnValLeuThrGluGluHisIle-435
442-PheAlaAspLysAlaAspVal-448
458-GlnThrValLysAspAsnGlyTyr-465
473-ValGluProGluAspThrArgGluIleIleAsp-483
490-GluIleSerGluThrValAlaLysIleGluArgLeuArgArgGluIleAspGluValIleAla-510

Hydrophilic Regions - Hopp-Woods

18-IleAlaAspGluValArgGlyAlaValAsp-27
55-GlyAspSerSerIle-59
71-ProGluIleLysAspAspAlaValLysVal-80
98-AlaHisGlnAsnGluGluLeuAsnThrLysLeuLysGlu-110
122-TyrProSerGluGlnAspIleLysGlyLeuPheAspAspPheAspThrThrSerSerArgLeu-142
146-ValAlaAspLysAsnLysArgLeu-153
167-SerPheGluAspHisHis-172
191-AlaGlyLysSerGlyGly-196
215-GlyGlnGluLysValAsnLysIleTyrAsp-224
235-GlnAlaLysLysGlnPheAsp-241
287-ProLysLeuLysAspSerLysProPhe-295
316-LeuIleAsnAspAspArgPheAla-323
330-ProLysSerLysAlaAsp-335
348-GlyArgGlyArgAla-352
364-GlyGlyAlaGluGlnLysIleArg-371
404-SerLysHisLysAspAsnThrAsp-411

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419-GlyPhePheLysLysGluThrAsn-426
 430-LeuThrGluGluHisIle-435
 442-PheAlaAspLysAlaAspVal-448
 458-GlnThrValLysAspAsnGly-464
 473-ValGluProGluAspThrArgGluIleIleAsp-483
 490-GluIleSerGluThrValAlaLysIleGluArgLeuArgArgGluIleAspGluValIleAla-510

a606**AMPHI Regions - AMPHI**

72-LeuLeuAspHisMetThrArgAspGlu-80
 90-AlaHisValGlyAsnGlyAsp-96
 100-LeuThrLeuIleGlnGlyValValAsnThrPhe-110
 116-ArgIleIleAlaAsn-120
 139-SerMetValPheGlnIleLeuPheGlyPheLeuAlaSerLeuIleVal-154
 171-LysLeuValGlyAlaProLysMetIleSerAlaLeuGlnArg-184
 191-AspLeuProGluGluMetAsnAla-198

Antigenic Index - Jameson-Wolf

13-GluValIleAspThrProArgThrGluGluGluAla-24
 31-GluAlaGlnAlaArgGlnTrpAsnLeuLysThrProGlu-43
 48-HisSerProGluProAsnAla-54
 57-ThrGlyAlaSerArgAsnSerSer-64
 75-HisMetThrArgAspGluValGluAla-83
 92-ValGlyAsnGlyAsp-96
 122-IleAlaArgAsnAsnAspGlySerGlnSerGlnGlyThr-134
 159-ArgGlnArgGluTyrArgAlaAspAlaGlyAla-169
 182-LeuGlnArgLeuLysGlyAsnProValAspLeuProGluGluMetAsn-197
 203-GlyAspThrArgAspSerLeuLeuSerThrHisProSerLeuAspAsnArgIleAlaArgLeuLysSer-225

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Hydrophilic Regions - Hopp-Woods

13-GluValIleAspThrProArgThrGluGluGluAla-24
 59-AlaSerArgAsnSer-63
 75-HisMetThrArgAspGluValGluAla-83
 124-ArgAsnAsnAspGlySerGlnSer-131
 159-ArgGlnArgGluTyrArgAlaAspAlaGlyAla-169
 183-GlnArgLeuLysGlyAsnPro-189
 191-AspLeuProGluGluMetAsn-197
 203-GlyAspThrArgAspSerLeu-209
 214-ProSerLeuAspAsnArgIleAlaArgLeuLysSer-225

a607**AMPHI Regions - AMPHI**

18-ArgLeuLeuThrAlaLeuAlaLeu-25
 70-PheMetGlyIleMetAlaAlaLeuAsnProMetIleAlaGln-83
 90-ThrAspGluValGlyGluThr-96
 104-GlyLeuPheLeuGlyValPheGlyMetValLeuMetTrpAlaAlaIleThrProPheArgAsnTrpLeuThr
 LeuSerAspTyrValGluGlyThrMet-136
 151-MetValHisArgAlaLeuHisAlaTyrAlaSerSer-162
 226-PhePheArgProPheGly-231
 244-PheLysGlnIleTrpLysIleGlyAla-252
 320-AlaArgTyrIleSerGlyValSerLeu-328
 337-IleThrValLeuSerLeuVal-343
 373-PheGlnProAlaAspPheThrGlnCysIleAlaSerTyrAla-386
 424-TyrGlyPheTrpThrAlaLeuIleAla-432

Antigenic Index - Jameson-Wolf

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15-LysGluValArgLeu-19
 47-GlyAlaGlyLysGluAspLeuAla-54
 86-GlyAlaGlyLysThrAspGluValGlyGluThrGlyArgGlnGlyIle-101
 121-ProPheArgAsnTrp-125
 128-LeuSerAspTyrValGluGlyThr-135
 160-AlaSerSerLeuAsnArgProArgLeu-168
 234-AlaLysPheGlyLysProAspTrp-241
 311-SerLeuGlyArgArgGluPheSerArgAlaArgTyrIleSer-324
 353-TyrAsnAsnAspPro-357
 388-ArgGlyTyrLysValThrLys-394
 447-LeuCysSerArgGluMetValArgSerHisLysAlaVal-459

Hydrophilic Regions - Hopp-Woods

15-LysGluValArgLeu-19
 47-GlyAlaGlyLysGluAspLeuAla-54
 88-GlyLysThrAspGluValGlyGluThrGlyArg-98
 163-LeuAsnArgProArg-167
 312-LeuGlyArgArgGluPheSerArg-319
 390-TyrLysValThrLys-394
 447-LeuCysSerArgGluMetValArgSerHisLysAlaVal-459

a608**AMPHI Regions - AMPHI**

66-AlaValGlnLysIleLeuGln-72
 93-ValLeuSerLeuLeu-97
 103-ArgAlaSerAspGluLeuAlaArgIlePheGlyThrGln-115
 124-AspIleGlyHisGlyIleLysGlnIleGlyArgAsnIleAlaGluGlnIleGlyArgPheSerArgGluPro
 GluSerAla-150
 154-AsnGluAlaLeuAlaAspCysLeuAspGluIleSerArgLeuArgAspGlyValGluArgLeuAsnGluArg
 LeuAspArgLeu-181

Antigenic Index - Jameson-Wolf

13-LeuGlnSerProAspSerArgSerGluLeu-22
 39-LeuAlaGlyArgIleThrGluAspGlyLeuLeuSerAlaGlyAsnGlyPheAlaAspThrGluIleThrPheA
 rgAsnSerAla-66
 71-LeuGlnGlyGlyGluProGlyAlaGlyAspIleGlyLeuGluGly-85
 98-GlySerLeuArgSerArgAlaSerAspGluLeuAla-109
 114-ThrGlnAlaAspIleGlySerArgAlaAlaAsp-124
 131-GlnIleGlyArgAsnIleAla-137
 139-GlnIleGlyArgPheSerArgGluProGluSerAlaAsnIleGlyAsn-154
 156-AlaLeuAlaAspCysLeuAspGluIleSerArgLeuArgAspGlyValGluArgLeuAsnGluArgLeuAsp
 ArgLeuGluArgAspIleTrp-186

Hydrophilic Regions - Hopp-Woods

15-SerProAspSerArgSerGluLeu-22
 39-LeuAlaGlyArgIleThrGluAspGlyLeu-48
 56-AlaAspThrGluIleThrPhe-62
 74-GlyGluProGlyAlaGly-79
 81-IleGlyLeuGluGly-85
 100-LeuArgSerArgAlaSerAspGluLeuAla-109
 116-AlaAspIleGlySerArgAlaAlaAsp-124
 139-GlnIleGlyArgPheSerArgGluProGluSerAlaAsnIleGly-153
 156-AlaLeuAlaAspCysLeuAspGluIleSerArgLeuArgAspGlyValGluArgLeuAsnGluArgLeuAsp
 ArgLeuGluArgAspIleTrp-186

a609**AMPHI Regions - AMPHI**

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15-ThrLeuAspAlaPheVal-20
 30-HisHisIlePheHisGluPheArgValPheValGlyPhePhe-43
 52-PheGluGlnAlaValGlu-57
 67-IleAspAspPheLeu-71
 114-ValAlaValCysThrVal-119

Antigenic Index - Jameson-Wolf

10-AlaLeuAspAspGluThrLeu-16
 20-ValGlyAsnGlnArgSerSerAspIleAla-29
 69-AspPheLeuAspThrAspPheGlyIle-77
 79-SerGlnAlaAspGlyAsnValArg-86
 99-GlyThrArgAlaLysArgGlyTyrGlyAsnHisAspLeu-111
 124-ArgGluAlaAspIle-128

Hydrophilic Regions - Hopp-Woods

10-AlaLeuAspAspGluThrLeu-16
 23-GlnArgSerSerAspIle-28
 79-SerGlnAlaAspGlyAsnVal-85
 100-ThrArgAlaLysArgGlyTyrGly-107
 124-ArgGluAlaAspIle-128

a610**AMPHI Regions** - AMPHI

6-MetGlnPheProTyr-10
 14-SerAlaSerArgMetArgArgMetArgArg-23
 98-GluArgAlaGlnGluAlaTyr-104
 111-ProSerThrValArgAlaLeuArgGluArg-120
 187-IleArgGluAlaLeuGlu-192
 208-TyrAlaSerAlaPheTyrGlyProPheArgAsp-218
 223-SerGlyAsnLeuGlyLysAlaAsp-230
 268-LeuAspValValArgArgValLysAspGlu-277
 296-AlaAlaValAlaAsn-300

Antigenic Index - Jameson-Wolf

11-ArgAsnValSerAlaSerArgMetArgArgMetArgArgAspAspPheSerArgArgLeuMetArgGluHisThrLeuThrAlaAspAsp-40
 50-GlySerAlaArgGluGluAspValProSerMetProGlyValLysArgGlnSerLeuAsp-69
 75-AlaGluGluAlaValLys-80
 94-AlaAsnLysThrGluArgAlaGlnGluAlaTyrAsnProGluGlyLeuVal-110
 115-ArgAlaLeuArgGluArgPhePro-122
 139-GlyGlnAspGlyLeuThrAspGluAsnGlyTyrValMetAsnAspGluThrVal-156
 175-AlaProSerAspMetMetAspGlyArgIleGlyAlaIleArgGluAlaLeuGluAspAlaGlyHis-196
 215-ProPheArgAspAlaValGlySerSerGlyAsnLeuGlyLysAlaAspLysLysThrTyrGlnMetAspProAlaAsnThrAspGluAlaLeuHis-246
 250-LeuAspIleGlnGluGlyAlaAsp-257
 270-ValValArgArgValLysAspGluPheGlyVal-280
 302-TrpLeuAspGlyGlyLysValVal-309
 317-LysArgAlaGlyAlaAspGly-323
 331-GluAlaAlaLysMetLeuLysArg-338

Hydrophilic Regions - Hopp-Woods

14-SerAlaSerArgMetArgArgMetArgArgAspAspPheSerArgArgLeuMetArgGluHisThrLeuThrAla-38
 50-GlySerAlaArgGluGluAspValProSer-59
 61-ProGlyValLysArgGlnSerLeuAsp-69
 75-AlaGluGluAlaValLys-80

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95-AsnLysThrGluArgAlaGlnGluAlaTyrAsn-105
 115-ArgAlaLeuArgGluArgPhePro-122
 141-AspGlyLeuThrAspGluAsnGly-148
 151-MetAsnAspGluThrVal-156
 178-AspMetMetAspGlyArgIleGlyAlaIleArgGluAlaLeuGluAspAlaGly-195
 216-PheArgAspAlaValGly-221
 225-AsnLeuGlyLysAlaAspLysLysThrTyrGln-235
 238-ProAlaAsnThrAspGluAlaLeuHis-246
 250-LeuAspIleGlnGluGlyAlaAsp-257
 270-ValValArgArgValLysAspGluPheGly-279
 317-LysArgAlaGlyAla-321
 331-GluAlaAlaLysMetLeuLysArg-338

a611**AMPHI Regions - AMPHI**

15-CysArgLeuPheGlyLysLeuSerLeu-23
 26-ArgLeuLeuLeuGlyLeu-31
 48-ArgSerValArgArgValIle-54
 63-GlnValValAlaVal-67
 104-ValPheIleGluAspPheVal-110
 129-LeuGlyPheLeuGlyAsnValLeuArgThr-138

Antigenic Index - Jameson-Wolf

1-MetProSerGluAsnArgMetGlyLysArgGlnLeuAla-13
 32-CysArgSerGlyValCysArgGlyArgCys-41
 45-PheProSerArgSerValArgValIlePheArgArgValArgIle-60
 119-AsnProAlaAspPheArgIle-125
 142-AlaSerGlnGluAsp-146

Hydrophilic Regions - Hopp-Woods

1-MetProSerGluAsnArgMetGlyLysArgGlnLeuAla-13
 35-GlyValCysArgGlyArgCys-41
 53-ValIlePheArgArgValArgIle-60
 121-AlaAspPheArgIle-125
 142-AlaSerGlnGluAsp-146

a612**AMPHI Regions - AMPHI**

6-AsnIleAlaLysLysLeuAlaGlyVal-14
 55-AlaAspLysAlaValGluLysCysAlaGluAsnValLeu-67
 81-GlyAsnPheProAsn-85
 101-AsnProTyrXxxLysLeuAsnLysSerLysSerProAspIlePheArgArgPhePheXxxGlyHisSer-123

Antigenic Index - Jameson-Wolf

7-IleAlaLysLysLeuAlaGlyValAsp-15
 17-IleAlaPheAspPheAspGly-23
 27-AspPheGlyArgAspAspAlaValArgHisSerGlyVal-39
 57-LysAlaValGluLysCysAlaGlu-64
 97-GlyHisHisArgAsnProTyrXxxLysLeuAsnLysSerLysSerProAspIlePheArg-116

Hydrophilic Regions - Hopp-Woods

7-IleAlaLysLysLeuAlaGlyValAsp-15
 28-PheGlyArgAspAspAlaValArg-35
 57-LysAlaValGluLysCysAlaGlu-64
 105-LysLeuAsnLysSerLysSerProAspIlePhe-115

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AMPHI Regions - AMPHI

7-SerArgArgSerLeu-11
 95-MetProArgMetArgSer-100
 103-SerProMetSerProAla-108
 115-ArgIlePheCysThrAlaLeuLeuArgLys-124
 140-SerSerValMetArgPro-145
 168-LeuSerGlyLeuCysArgIle-174

Antigenic Index - Jameson-Wolf

1-MetSerArgSerSerArgSerArgArgSerLeuArgArgSerThrProSerArg-18
 23-SerSerArgGlnSerAlaArgAla-30
 35-PheAlaAspSerGlySerArgGluAsnLeu-44
 73-ProLysIleArgAlaAsnSerSerAspAlaArgGluArgArgLeuProSerArgAspSerThrAla-94
 96-ProArgMetArgSerProSerSerProMetSerProAlaProGlySerProProTrp-114
 130-AlaLysProPheProAlaGluSerLysProSerSerValMetArgProAlaSer-147
 161-LysAlaAlaSerSerGluArgLeuSerGlyLeuCysArgIleArgArg-176
 178-MetMetGlyArgArgAlaAspIlePheSerAspArgGlyGlyGlu-192

Hydrophilic Regions - Hopp-Woods

1-MetSerArgSerSerArgSerArgArgSerLeuArgArgSerThrProSer-17
 24-SerArgGlnSerAlaArgAla-30
 38-SerGlySerArgGluAsnLeu-44
 73-ProLysIleArgAlaAsnSerSerAspAlaArgGluArgArgLeuProSerArgAspSerThrAla-94
 96-ProArgMetArgSerProSer-102
 133-PheProAlaGluSerLysProSerSerValMetArg-144
 161-LysAlaAlaSerSerGluArgLeuSerGly-170
 172-CysArgIleArgArg-176
 178-MetMetGlyArgArgAlaAspIlePheSerAspArgGlyGlyGlu-192

a614**AMPHI Regions - AMPHI**

20-SerGlnPheIleGlnGlnVal-26
 65-AsnLeuIleLysThrLeuLeuAsp-72
 90-AlaLeuPheTyrSerLeuLeuProValLeu-99
 144-ValAlaGlyCysAspGluAlaLysGluGluValGlnGluIleValAspTyrLeuLysAlaProAsnArgTyr
 GlnSerLeu-170
 210-AspPheValGluMetPheVal-216
 222-ArgValArgAspMetPheGluGln-229
 242-GluIleAspAlaValGlyArg-248
 295-ProAlaLeuGlnArgProGlyArgPheAsp-304
 333-SerValAspLeuLeuSerLeuAla-340
 349-AlaAspLeuAlaAsnLeuValAsn-356

Antigenic Index - Jameson-Wolf

7-LeuAspGlyLysLysGluAspAsnGlyGlnIleGlu-18
 26-ValAsnAsnGlyGluValSerGly-33
 45-LeuIleLysGlyGluArgThrAspLysSerThrPhe-56
 60-AlaProLeuAspAspAsnLeuIle-67
 70-LeuLeuAspLysAsnValArgValLysValThrProGluGluLysProSerAla-87
 111-MetGlnThrGlyGlyGlyGlyLysGlyGly-120
 123-SerPheGlyLysSerArgAlaArgLeuLeuAspLysAspAlaAsnLys-138
 145-AlaGlyCysAspGluAlaLysGluGluValGlnGlu-156
 161-LeuLysAlaProAsnArgTyrGlnSerLeuGlyGlyArgValProArgGly-177
 182-GlySerProGlyThrGlyLysThrLeuLeu-191
 207-SerGlySerAspPhe-211
 219-GlyAlaSerArgValArgAspMetPheGluGlnAlaLysLysAsnAla-234

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241-AspGluIleAspAlaValGlyArgGlnArgGlyAlaGlyLeuGlyGlyGlyAsnAspGluArgGluGlnThr
Leu-265
272-MetAspGlyPheGluSerAsnGln-279
287-ThrAsnArgProAspValLeuAspProAlaLeuGlnArgProGlyArgPheAspArg-305
311-LeuProAspIleArgGlyArgGluGlnIle-320
323-ValHisSerLysLysValProLeuAspLysSerValAsp-335
341-ArgGlyThrProGlyPheSerGly-348
362-AlaGlyArgArgAsnLysValLysValAspGlnSerAspLeuLysThrProLysThrLysSer-382

Hydrophilic Regions - Hopp-Woods

7-LeuAspGlyLysLysGluAspAsnGlyGln-16
27-AsnAsnGlyGluValSer-32
46-IleLysGlyGluArgThrAspLysSerThr-55
61-ProLeuAspAspAsnLeuIle-67
70-LeuLeuAspLysAsnValArgValLysValThrProGluGluLysProSer-86
125-GlyLysSerArgAlaArgLeuLeuAspLysAspAlaAsnLys-138
145-AlaGlyCysAspGluAlaLysGluGluValGlnGlu-156
162-LysAlaProAsnArg-166
171-GlyGlyArgValProArg-176
221-SerArgValArgAspMetPheGluGlnAlaLysLysAsnAla-234
241-AspGluIleAspAlaValGlyArgGlnArgGlyAlaGly-253
256-GlyGlyAsnAspGluArgGluGlnThr-264
273-AspGlyPheGluSer-277
287-ThrAsnArgProAspValLeuAsp-294
296-AlaLeuGlnArgProGlyArgPheAspArg-305
312-ProAspIleArgGlyArgGluGlnIle-320
324-HisSerLysLysValProLeuAspLysSerValAsp-335
362-AlaGlyArgArgAsnLysValLysValAspGlnSerAspLeuLysThrProLysThrLys-381
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AMPHI Regions - AMPHI

6-LysMetValValGlyLeu-11
13-AsnProGlyLysGluTyrGlu-19
48-PheGlyGluValAlaArgAla-54
77-ValAlaAlaLeuAlaGlnPheTyrLys-85
115-GlyHisAsnGlyLeuLysAspIle-122
161-ProThrAspArgCysArgArgGlnIlePro-170
174-ThrArgHisProCysArgGlnMetArgGly-183
201-ThrAlaCysSerArgPheProTyr-208
265-AlaProValGlnAsnLeuProAsnValAla-274
297-GlyGlyIleTyrSerLeuLeuPhe-304
317-PheAspLysAlaAla-321
355-CysPheAlaLeuPheSerGluCysAlaGlnAlaPhe-366
368-AlaThrArgThrGlySerLeuGlyAspValLeuAlaAspMetAlaGlyThrValLeu-386

Antigenic Index - Jameson-Wolf

11-LeuGlyAsnProGlyLysGluTyrGluGlnThrArgHisAsnAlaGlyPhe-27
39-AlaSerPheLysGluGluLysLysPhePhe-48
51-ValAlaArgAlaThrLeuProAspGlyAsp-60
65-LysProThrThrPheMetAsnArgSerGlyGlnAla-76
86-IleLysProGluGlu-90
96-AspGluLeuAspIleProCysGlyArgIleLysPhe-107
109-LeuGlyGlyGlyAsnGlyGlyHisAsnGlyLeuLysAspIleGlnAla-124
127-GlyThrAlaAspTyrTyrArg-133
138-IleGlyHisProGlyAspArgAsnLeu-146

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152-LeuAsnLysProSerThrGluXxxProProThrAspArgCysArgArgGlnIleProAlaSerHisThrArg
 HisProCysArgGlnMetArgGlyAsnProLeuPro-187
 190-GlnMetThrArgCysArgLeuLysProPheGlnThrAlaCysSerArgPheProTyrProAsnSerHisAsp
 ArgThrGlnAla-217
 219-TyrProAsnArgIleHisProArgHisArgArgAsnProArgPheProAla-235
 238-MetGlnHisArgArgArgThrIleArgArgArgSerGlyThrMetAlaArgHisThrCysArgThrArgArg
 GlnIlePro-264
 266-ProValGlnAsnLeuProAsnValAlaGlyArgGlyGlyGlyMetLysLeuProArgAsnArgPheSer-28
 8
 306-AlaAlaAspThrAlaProProProPheProHisPheAspLysAlaAla-321
 336-AlaPheLysThrGlyLysLeuProIle-344
 368-AlaThrArgThrGlySerLeuGly-375
 392-ArgAlaAlaAspArgProAsp-398

Hydrophilic Regions - Hopp-Woods

13-AsnProGlyLysGluTyrGluGlnThrArgHis-23
 39-AlaSerPheLysGluGluLysLysPhePhe-48
 86-IleLysProGluGlu-90
 96-AspGluLeuAspIleProCysGlyArgIleLysPhe-107
 117-AsnGlyLeuLysAspIleGlnAla-124
 140-HisProGlyAspArgAsnLeu-146
 155-ProSerThrGluXxxProProThrAspArgCysArgArgGlnIlePro-170
 172-SerHisThrArgHisProCysArgGlnMetArgGlyAsnPro-185
 190-GlnMetThrArgCysArgLeuLysPro-198
 210-AsnSerHisAspArgThrGln-216
 223-IleHisProArgHisArgArgAsnProArg-232
 238-MetGlnHisArgArgArgThrIleArgArgArgSerGlyThrMet-252
 255-HisThrCysArgThrArgArgGlnIle-263
 274-AlaGlyArgGlyGlyGly-279
 281-LysLeuProArgAsnArgPhe-287
 306-AlaAlaAspThrAla-310
 316-HisPheAspLysAlaAla-321
 336-AlaPheLysThrGlyLys-341
 392-ArgAlaAlaAspArgProAsp-398

a619**AMPHI Regions - AMPHI**

50-LysLeuAlaAlaLeuLeu-55
 66-GlnLeuPheGlnThrLeuThrAsn-73
 134-GlnGlyGlyArgAspLeu-139
 146-GlyValIlePheGlyIleLeuPheArgSerLeuSerSerLeuLeuSerArg-162
 165-AspProGluGluPhe-169
 175-AsnMetPheAlaGlyPheAsnThrValHisSer-185
 246-AlaValValGlyProValSerPhePheGlyLeuLeuAlaAlaSerLeuAlaAsnHisPheSer-266
 303-LeuSerValValValGluPhe-309

Antigenic Index - Jameson-Wolf

1-MetProSerGluLysAsnIle-7
 11-AlaGlySerSerArgPro-16
 35-AsnValLysGlyAspTrpAsp-41
 132-IleLysGlnGlyGlyArgAspLeuPro-140
 163-MetIleAspProGluGluPheThr-170
 203-TrpArgGluArgTyrArgLeu-209
 213-LeuLeuGlyArgAspGlnAla-219
 265-PheSerProSerValLysHisSerVal-273

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Hydrophilic Regions - Hopp-Woods

1-MetProSerGluLysAsnIle-7
 134-GlnGlyGlyArgAspLeuPro-140
 163-MetIleAspProGluGluPheThr-170
 203-TrpArgGluArgTyrArgLeu-209
 213-LeuLeuGlyArgAspGlnAla-219
 269-ValLysHisSerVal-273

a620**AMPHI Regions - AMPHI**

9-ValAlaValSerAlaLeuSerAlaCysArgGlnAla-20
 31-IleSerAspArgSerVal-36
 67-SerThrIleLysGlnMetPheGlyTyrThrLysLeuProGluGluProLysGlyIleArgValIleTyrValThrAspMetGlyAsnValThrAspTrpThr-100
 139-GlnAlaGluLysPhe-143

Antigenic Index - Jameson-Wolf

15-SerAlaCysArgGlnAlaGluGluGlyProProProLeuProArgGlnIleSerAspArgSerValGlyHis-38
 43-AsnLeuThrGluHisAsnGlyProLysAla-52
 57-AsnGlyLysProAspGlnProVal-64
 75-TyrThrLysLeuProGluGluProLysGlyIle-85
 97-ThrAspTrpThrAsnProAsnAlaAspThrGluTrpMetAspAlaLysLys-113
 125-GlyMetGlyAlaGluAspAlaLeuProPheGlyAsnLysGluGlnAlaGluLysPheAlaLysAspLysGlyGlyLysValValGlyPheAspAspMetProAspThrTyr-161

Hydrophilic Regions - Hopp-Woods

18-ArgGlnAlaGluGluGlyProProProLeu-27
 30-GlnIleSerAspArgSerVal-36
 46-GluHisAsnGlyProLys-51
 58-GlyLysProAspGln-62
 77-LysLeuProGluGluProLysGlyIle-85
 103-AsnAlaAspThrGluTrpMetAspAlaLysLys-113
 127-GlyAlaGluAspAlaLeu-132
 135-GlyAsnLysGluGlnAlaGluLysPheAlaLysAspLysGlyGlyLys-150
 155-AspAspMetProAsp-159

a622**AMPHI Regions - AMPHI**

28-LeuProGluAlaValArgAsnLeuAlaArg-37
 62-GluGluIleIleArgTrpLeuAlaAsp-70
 112-IleLeuGlyGlnIleLysAspAlaValArgValAlaGln-124
 131-LysLysLeuAsnAlaLeuPheGlnLys-139
 142-SerValAlaLysGluVal-147
 169-GluGlnIlePheProAspIleGlyAsp-177
 187-GluMetIleGluLeuValAla-193
 214-AlaGlnGluLeuCysAspLys-220
 232-AspLeuProAlaIleLeuHis-238
 288-AspLeuAsnAspAla-292
 297-ValAspAspMetValAsnIleValGlnSerGly-307
 324-GluLysValAlaGluPheValArgGlnGln-333
 345-LeuArgAspGluGlyGluLys-351
 354-LysGlnValLeuGluAsnAlaMetLysGlnLeuAlaLys-366
 384-LysLeuLeuHisSerProThrGlnThrLeuAsnLysAlaGlyGlu-398

Antigenic Index - Jameson-Wolf

16-SerIleArgGluLysLeuAla-22

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30-GluAlaValArgAsnLeuAlaArgSerAsnAlaAla-41
 49-ThrCysAsnArgThrGlu-54
 57-CysValGlyAspSerGluGluIleIle-65
 75-ProIleGluGluIleSerProTyrLeu-83
 90-GluThrValArgHis-94
 115-GlnIleLysAspAlaValArgValAlaGlnGluGlnGluSerMetGlyLysLysLeu-133
 142-SerValAlaLysGluValArgThrAspThrAlaValGlyGluAsnSerVal-158
 174-AspIleGlyAspLeuAsn-179
 199-LysSerProArgLeu-203
 210-ThrLeuAlaArgAlaGlnGluLeuCysAspLysLeuGlyValAsnAlaGlu-226
 257-GlyMetValGluArgAlaLeuLysGlnArgGlnSer-268
 277-AlaValProArgAspIleGluAlaGluValGlyAspLeuAsnAsp-291
 305-GlnSerGlyLysGluAlaArgGlnLysAlaAlaAlaAla-317
 321-LeuValSerGluLysValAlaGluPheValArgGlnGlnGlnGlyArgGlnSerVal-339
 343-ArgAlaLeuArgAspGluGlyGluLysAlaArgLysGlnValLeu-357
 368-AlaThrAlaGluGluValLeuGlu-375
 381-LeuThrAsnLysLeuLeuHisSerProThrGlnThrLeuAsnLysAlaGlyGluGluAspLysAspLeuVal-404

Hydrophilic Regions - Hopp-Woods

16-SerIleArgGluLysLeuAla-22
 30-GluAlaValArgAsnLeuAlaArgSerAsnAlaAla-41
 59-GlyAspSerGluGluIleIle-65
 75-ProIleGluGluIleSer-80
 90-GluThrValArgHis-94
 115-GlnIleLysAspAlaValArgValAlaGlnGluGlnGluSerMetGlyLysLysLeu-133
 142-SerValAlaLysGluValArgThrAspThrAlaValGlyGluAsnSerVal-158
 210-ThrLeuAlaArgAlaGlnGluLeuCysAsp-219
 257-GlyMetValGluArgAlaLeuLysGlnArgGlnSer-268
 277-AlaValProArgAspIleGluAlaGluValGlyAspLeuAsn-290
 305-GlnSerGlyLysGluAlaArgGlnLysAlaAlaAlaAla-317
 321-LeuValSerGluLysValAlaGluPheValArg-331
 333-GlnGlnGlyArgGlnSer-338
 343-ArgAlaLeuArgAspGluGlyGluLysAlaArgLysGlnValLeu-357
 368-AlaThrAlaGluGluValLeuGlu-375
 392-ThrLeuAsnLysAlaGlyGluGluAspLysAspLeuVal-404

a624**AMPHI Regions - AMPHI**

14-LeuLeuLeuGlyIleIleGlyIlePheLeuPro-24
 45-ArgPheHisArgTrpLeuHis-51
 58-ProMetValHisAsn-62
 92-PheProGlnArgTrpTrpValGlyAla-100
 102-SerSerValPheCysSerLeuValAlaIle-111

Antigenic Index - Jameson-Wolf

41-LysAlaSerProArgPheHisArgTrp-49
 51-HisArgHisArgTyrPheGlyProMet-59
 63-TrpGluGlnAsnGlyAlaValProArgLysAlaLys-74
 115-ArgArgProGluSer-119

Hydrophilic Regions - Hopp-Woods

67-GlyAlaValProArgLysAlaLys-74
 115-ArgArgProGluSer-119

a625**AMPHI Regions - AMPHI**

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25-SerGlyArgIleIleSerIleAlaAla-33
 64-LysMetProProGluMetValTyrArgAla-73

Antigenic Index - Jameson-Wolf

5-ArgLysMetLysLysMetThrMetCysThrArgArgVal-17
 57-ProPheLysSerProGlnThrLysMetProPro-67
 73-AlaSerSerSerArgMetLysGly-80
 96-AspAlaProLysThrLysLeuAsnGlyMetArgLysSerAsnValGln-111

Hydrophilic Regions - Hopp-Woods

5-ArgLysMetLysLysMetThrMetCysThrArgArgVal-17
 60-SerProGlnThrLysMetProPro-67
 74-SerSerSerArgMetLysGly-80
 96-AspAlaProLysThrLysLeuAsnGlyMetArgLysSerAsnValGln-111

a627**AMPHI Regions** - AMPHI

21-LeuGlnAsnLeuVal-25
 56-IleAlaGluValGlyLysLeuPheLeuGlyIlePheIleThrIlePheProValLeuSerIleLeuLysAlaGlyGluAlaGlyAlaLeuGlyGlyValValSerLeuValHisAspThrAlaGlyHisProIle-100
 109-GlyIleLeuSerAlaPheLeuAspAsnAla-118
 141-PheHisSerLeuLeuAlaValSer-148
 153-PheMetGlyAlaLeuThrTyrIleGlyAsnAlaProAsnPheMetValLys-169
 181-ThrPhePheGlyTyr-185

Antigenic Index - Jameson-Wolf

3-GlyLeuTrpLysProGluHisProGlyPhe-12
 41-ThrProLysGlnValArgAlaGlyAsnGluPheAsnPhe-53
 94-AspThrAlaGlyHis-98
 128-AlaGlyGlyAspAla-132
 170-AlaIleAlaGluGlnArgGlyValPro-178

Hydrophilic Regions - Hopp-Woods

5-TrpLysProGluHisProGly-11
 43-LysGlnValArgAlaGlyAsn-49
 170-AlaIleAlaGluGlnArgGlyVal-177

a628**AMPHI Regions** - AMPHI

10-CysGlyProProAsnSerCysValSerMetLeuAlaAlaPheSerAspGlyThrSerAlaProAlaAla-32
 34-HisThrTrpIleLeuArgSer-40

Antigenic Index - Jameson-Wolf

6-LysProAlaGlyCysGlyProProAsnSer-15
 23-PheSerAspGlyThrSerAla-29
 40-SerValLysArgLeuAsnThrSerLysProArgLeuLysSerSerAla-55
 77-MetAlaAsnGlySerAlaSerThr-84
 91-GlyArgValArgSerAlaValHisLysProAspTrpIleArgLeuArgArgThrSerSerProLeuLys-113
 116-AsnAlaSerGlyAla-120

Hydrophilic Regions - Hopp-Woods

40-SerValLysArgLeuAsnThrSerLysProArgLeuLysSerSerAla-55
 91-GlyArgValArgSerAlaValHisLys-99
 101-AspTrpIleArgLeuArgArgThrSerSer-110

a629**AMPHI Regions** - AMPHI

32-ArgTrpSerAspValPheSer-38

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48-IleSerArgLeuProArgThrPhe-55
116-ValAlaAlaLeuIleGlyMetLeuValPhe-125
146-IlePheGlyGlyValValGluAlaValAlaThr-156
167-MetLeuGlyValTrpGlnGlnGlyAsp-175
191-GlyIleLeuAlaLeuPheAla-197
205-ThrIleLeuGlyLeuGlyGlu-211
252-ValValProAsnIleIleSerArgLeuIleGlyAspArgLeuArgGlnSer-268
285-IleIleGlyArgVal-289
300-ThrValPheGlyValLeu-305

Antigenic Index - Jameson-Wolf

38-SerLeuSerAspSerGln-43
50-ArgLeuProArgThr-54
77-AsnArgPheValGluProSerMetAlaGlyAlaGlyGln-89
131-ArgLeuProProThrAla-136
174-GlyAspPheSerGly-178
260-LeuIleGlyAspArgLeuArgGlnSer-268
316-ArgLysProAlaHis-320

Hydrophilic Regions - Hopp-Woods

260-LeuIleGlyAspArgLeuArgGln-267
316-ArgLysProAlaHis-320

a630**AMPHI Regions** - AMPHI

9-LeuPheProAlaMetPheTyrGlyMetTyrAsn-19
30-ProAspLeuLeuGlnGlnSerIleAlaAsnAspTrpHisTyrAlaLeu-45
81-GlyGlyPheTrpGluValLeuPheAla-89
135-PheGlyGlyThrGlyLysAsnPhe-142
169-AlaValAspGlyTyrSerGlyAlaThrAlaLeuAlaGlnTrp-182
187-AlaAspGlyLeuLysAsnAlaIle-194
203-AspAlaPheIleGlyLysLeuProGlySerIleGlyGluValSer-217
230-PheAlaArgIleAlaSerTrpArgIleIleAlaGlyValMet-243
247-IleAlaMetSerSerLeuPheAsnPhe-255
289-ValSerAlaSerPheThrAsnValGlyLysTrpTrpTyrGlyAlaLeuIleGlyValMetCysValLeuIle
ArgVal-314
327-IleLeuPheAlaAsnLeuPheAlaProIlePheAspTyrPhe-340

Antigenic Index - Jameson-Wolf

91-ValArgLysHisGluIleAsnGlu-98
133-GluValPheGlyGlyThrGlyLysAsnPheMet-143
157-TyrProAlaAsnLeuSerGlyAspAla-165
186-GlyAlaAspGlyLeuLys-191
209-LeuProGlySerIleGly-214
257-GlySerAspThrAsnAla-262
345-AsnIleLysArgArgLysAlaArgSerAsnGly-355

Hydrophilic Regions - Hopp-Woods

91-ValArgLysHisGluIleAsn-97
345-AsnIleLysArgArgLysAlaArgSerAsnGly-355

a638**AMPHI Regions** - AMPHI

17-LeuAlaArgPheValAspAsnVal-24
30-IleValAspIleValGluHis-36
46-AspIleValLysHisPheGluProLeuGlyLys-56
118-ArgAlaGlyArgValPro-123

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149-IleGlyArgThrMetGln-154
 198-GluArgTyrValArgArgValTyrGlyTyrGlyThrPro-210
 212-ProValSerPheAspGlyCysArgThrValGlyArgPro-224
 242-SerGlnPheGluArgIleAlaArgProGly-251

Antigenic Index - Jameson-Wolf

13-GlyLysAsnAlaLeu-17
 43-AlaAspGlyAspIle-47
 52-GluProLeuGlyLysHisGln-58
 81-ValAspGlyGluThrGlnIle-87
 99-AlaGlyIleGlyLysAsnAlaVal-106
 113-ValAlaAspAspLeuArgAlaGlyArgValProAsnGlyAsn-126
 135-GlnSerArgValAlaAsp-140
 153-MetGlnIleAspAlaAspArgIleIle-161
 168-AsnGlnGlyAlaArgGlySerPhe-175
 178-IleAsnThrGlyIleHis-183
 188-HisThrGlyThrGlyAsnGlyGlnValAlaGluArgTyrValArg-202
 213-ValSerPheAspGlyCysArgThrValGlyArgProPheAsnArgAsnArgPheValAsp-232
 240-AlaGlySerGlnPheGluArgIleAlaArgProGlyAlaGlyLysCysGly-256

Hydrophilic Regions - Hopp-Woods

43-AlaAspGlyAspIle-47
 52-GluProLeuGlyLys-56
 81-ValAspGlyGluThrGlnIle-87
 113-ValAlaAspAspLeuArgAlaGlyArgValProAsn-124
 136-SerArgValAlaAsp-140
 153-MetGlnIleAspAlaAspArgIleIle-161
 195-GlnValAlaGluArgTyrValArg-202
 216-AspGlyCysArgThrValGly-222
 243-GlnPheGluArgIleAlaArgProGlyAlaGly-253

a639-1**AMPHI Regions - AMPHI**

95-TyrLysAsnAsnArg-99
 137-LeuLysValPheAspAsnIle-143
 157-ValAsnTyrSerAspIleHisAspAsnIleIleAsnLysAla-170
 269-AlaProValSerArg-273
 290-GlnPheProAlaValLeuProGly-297
 322-AspGlyLeuLeuLysLysValGlu-329

Antigenic Index - Jameson-Wolf

13-GluGluThrAlaPro-17
 23-HisAsnAsnIleLeuAspAsnSer-30
 41-AlaMetValArgGluAsnLysIleValGly-50
 52-AlaThrLeuArgValAsnGluArgGlyAsnGly-62
 75-GlyAsnAspIleSerLysGlyArgAspGlyIlePheSerAsnThrSerThrHisAsnThrTyrLysAsnAsnArgPheSerAsp-102
 111-TyrThrAsnAspSerGluIleSerGly-119
 121-IleSerValGlyAsnAsn-126
 135-GluArgLeuLysVal-139
 145-ValGlySerArgAspGlnGlyIle-152
 160-SerAspIleHisAspAsnIleIleAsnLysAlaGlyLys-172
 179-AlaAsnTyrAspLysLeuSerAlaAsnHis-188
 203-GluGlyThrSerLeuHisAspAsnSerPheIleAsnAsnGluSerGlnValLysTyrVal-222
 228-AspTrpSerGluGlyGlyHisGlyAsnTyrTrpSerAspAsnSerAla-243
 246-LeuAsnGlyAspGlyPheGlyAspSerAlaTyrArgProAsnGlyIleIle-262

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297-GlyGlyValValAspSerLysProLeuMetLysProTyrAlaProLysIleGlnThr-315
 318-GlnAlaMetLysAspGlyLeuLeuLysLysValGluThrArgGlnLeuGluTrpGlyArgAlaGluAsnGly
 SerLeuAsn-344

Hydrophilic Regions - Hopp-Woods

41-AlaMetValArgGluAsnLysIleValGly-50
 52-AlaThrLeuArgValAsnGluArgGlyAsn-61
 77-AspIleSerLysGlyArgAspGlyIle-85
 95-TyrLysAsnAsnArgPheSerAsp-102
 113-AsnAspSerGluIleSerGly-119
 135-GluArgLeuLysVal-139
 146-GlySerArgAspGlnGly-151
 180-AsnTyrAspLysLeuSer-185
 299-ValValAspSerLysProLeuMet-306
 318-GlnAlaMetLysAspGlyLeuLeuLysLysValGluThrArgGlnLeuGluTrpGlyArgAlaGluAsnGly
 Ser-342

a640**AMPHI Regions - AMPHI**

6-SerIleLeuLysSerIleGlyIle-13
 22-SerIleLysArgMetSer-27
 47-LeuProAlaTyrAlaGluArgLeuProAspPheLeuAlaLysIleGlnPro-63
 72-ArgTyrSerLysPro-76
 109-SerLysProIleAspThrLeuMetAla-117
 127-AlaLysLeuValAspHis-132

Antigenic Index - Jameson-Wolf

24-LysArgMetSerAlaPheArgAlaArgIle-33
 50-TyrAlaGluArgLeuProAspPheLeuAlaLysIleGlnProSerGluIleValProGlyAlaAspArgTyrS
 erLysProGluGlyLysProMetVal-82
 85-ValTyrLysGlyAspGluGlnLeu-92
 101-AlaValAsnThrArgGlyTyrSerSerLysProIleAsp-113
 118-LeuAlaLysAspGlyThr-123
 128-LysLeuValAspHisHisGlu-134

Hydrophilic Regions - Hopp-Woods

24-LysArgMetSerAlaPheArgAlaArgIle-33
 50-TyrAlaGluArgLeuPro-55
 68-ProGlyAlaAspArgTyrSerLysProGluGlyLysProMetVal-82
 85-ValTyrLysGlyAspGluGlnLeu-92
 118-LeuAlaLysAspGlyThr-123
 128-LysLeuValAspHisHisGlu-134

a642**AMPHI Regions - AMPHI**

6-CysProLeuSerAlaIleSerAlaVal-14
 116-IleLysHisIleValArgAlaPhe-123
 138-GlyValSerAlaPheLysThrLeuArgAlaGlnGluPheLeuGlnHisLeuArgGlyGlyVal-158
 161-PheArgGlyGluGly-165
 167-AspAspValArgLeu-171
 186-AlaAspValAlaValLysAsnLeuGlyAsnLeuMetAlaAlaProAsp-201
 220-ValPheLysGlyValPheHisAsnAlaValArgHisAlaAspGlnLeuGln-236
 270-ValAspGlyValThrAspGlyAla-277
 296-GlnValAspAspPheGlyGluPheAlaValPhe-306
 325-PheArgGlyValAsp-329
 378-AlaGluLeuLeuGlnTrpLeuGlnHisGlnArgAlaPheAspAlaGlyThr-394

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Antigenic Index - Jameson-Wolf

1-AlaCysArgArgIleCysPro-7
 22-ValGlnGlnGluGlyCysGly-28
 34-LeuTyrGluAspLysGluSerGlyAspAspPheAlaAspLysAspPheLeuGln-51
 73-ValAlaGlyAspGlyGlyLysAlaGly-81
 103-PheGlyGlyGlyAlaAspLysLeu-110
 123-PheLysAsnArgGluGlyAlaAspValAspSerAspIleAla-136
 143-LysThrLeuArgAla-147
 161-PheArgGlyGluGlyPheAspAspValArgLeu-171
 175-MetGlyAspGlyCysAsnGlyArgAsnGlyMet-185
 208-AspGluSerAspValValAla-214
 230-ArgHisAlaAspGlnLeuGlnAlaAlaAlaAspLysAspValLeuGluArgAlaGlnThrGly-250
 259-HisGlyGlyCysArg-263
 265-PheGlyIleAspAlaValAspGlyValThrAspGly-276
 290-CysPheGlyAspGluGlnGlnValAspAspPheGly-301
 309-PheGlyGlyAsnGluGluGluValAlaLeu-318
 328-ValAspValAsnGly-332
 344-PheSerGlyAsnArgArgAlaGlyGly-352
 388-ArgAlaPheAspAlaGlyThrGlnArgAsnGly-398
 401-ValMetProArgAsnPro-406

Hydrophilic Regions - Hopp-Woods

1-AlaCysArgArgIleCys-6
 34-LeuTyrGluAspLysGluSerGlyAspAspPheAlaAspLysAspPheLeu-50
 76-AspGlyGlyLysAla-80
 106-GlyAlaAspLysLeu-110
 123-PheLysAsnArgGluGlyAlaAspValAspSerAspIle-135
 143-LysThrLeuArgAla-147
 164-GluGlyPheAspAspValArgLeu-171
 178-GlyCysAsnGlyArgAsnGlyMet-185
 208-AspGluSerAspValValAla-214
 230-ArgHisAlaAspGlnLeuGlnAlaAlaAlaAspLysAspValLeuGluArgAlaGlnThr-249
 269-AlaValAspGlyValThrAspGly-276
 290-CysPheGlyAspGluGlnGlnValAspAspPheGly-301
 311-GlyAsnGluGluGluValAlaLeu-318
 346-GlyAsnArgArgAlaGly-351
 393-GlyThrGlnArgAsnGly-398

a644**AMPHI Regions** - AMPHI

25-CysGlyArgArgPheAspArgPro-32
 55-MetAspThrAlaAlaPheLeuLysHisIleGluSerAlaPheArgArgIlePheAlaAspGlyIleAspLeuMetArgTyrLeu-82
 111-GlnPheGluIleGlnGluValLeuArgIleAlaGly-122
 141-GlnProLeuGlnGluPheGlyAsp-148
 181-ArgGluMetGlnSerTyrTyrGluTyrThrAsp-191
 202-TyrTrpGlnGlyAsn-206
 224-LeuAlaLysValIleAspLeuLeu-231
 276-AlaGlyLeuArgAlaPheGlnAsn-283
 304-LeuGluAsnLeuGluArgTyrValArgAsn-313
 333-GluIleLeuTyrArgTyrValCysHis-341
 343-ValSerProValAlaProValAlaHis-351
 356-AlaAsnIleValLysThrLeuAla-363
 372-GlnMetLeuGlnLys-376
 399-PheThrIlePheGluGlyProAsn-406
 408-MetLeuTyrAlaGluIleTyrAspGlnPheValArgAla-420

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439-AspArgLeuGlnThr-443
 456-LeuProGluAspIleArgSerPhe-463
 481-GlyLysIleIleAlaArgLeu-487

Antigenic Index - Jameson-Wolf

1-MetProSerGluArgSerAlaAspCysCysPro-11
 16-ValLysPheArgLysSerThrLeuAsnCysGlyArgArgPheAspArgProProIleAsnGlyAsnArgGlnArgLysProMetIleHisThrGluProSerAlaGlnProSerThrMetAsp-56
 64-IleGluSerAlaPhe-68
 71-IlePheAlaAspGlyIleAsp-77
 82-LeuProGluAspLysTrpLeu-88
 99-PheLeuAspLysLysTyrGlyGlyArgLysGlySerGlnPheGluIle-114
 132-XxxXxxXxxGluGly-136
 145-GluPheGlyAspGluAlaGlnIle-152
 159-ValPheLysGlyGluGlyGlyGlyLeu-167
 170-ThrGluProGluThrSerGly-176
 178-AlaIleAlaArgGluMetGlnSerTyrTyrGluTyrThrAspGlyGlnThr-194
 202-TyrTrpGlnGlyAsnSerGlnSerAspPhe-211
 216-AlaLysGluArgLysAsnGlyLysLeuAlaLys-226
 235-LysThrTyrIleArg-239
 241-GluThrLeuAlaSerGluGlyLeuArg-249
 254-AlaValAsnArgIleAspAlaGluMet-262
 270-LeuSerGlnSerAspAlaAlaGly-277
 306-AsnLeuGluArgTyrValArgAsnAspIleArgPheValAspTyrGluArgArgGluIleArgArgArgHisGlnVal-331
 381-LysGlyPheGluArgGlyHisThrAlaGlyAsn-391
 403-GluGlyProAsnAspMetLeu-409
 420-AlaThrAlaGluGluLysGluAlaGlyMetLysLeuAspLysAsnGlnThrLeuLeuAspArgLeuGlnThrAspAlaArgPhe-447
 449-AlaValAlaArgAspTyrThrLeuProGluAspIleArgSerPheLeu-464
 493-AlaGluHisGluAspThrAla-499
 505-AspIleArgLysAspIleLeuAspCysArgTyrCysGly-517

Hydrophilic Regions - Hopp-Woods

1-MetProSerGluArgSerAlaAspCys-9
 17-LysPheArgLysSerThrLeuAsnCysGlyArgArgPheAspArgProProIleAsnGlyAsnArgGlnArgLysProMetIle-44
 64-IleGluSerAlaPhe-68
 82-LeuProGluAspLysTrpLeu-88
 100-LeuAspLysLysTyrGlyGlyArgLysGlySerGln-111
 145-GluPheGlyAspGluAlaGlnIle-152
 160-PheLysGlyGluGlyGly-165
 170-ThrGluProGluThrSerGly-176
 178-AlaIleAlaArgGluMetGlnSer-185
 216-AlaLysGluArgLysAsnGlyLysLeuAlaLys-226
 254-AlaValAsnArgIleAspAlaGluMet-262
 271-SerGlnSerAspAlaAlaGly-277
 306-AsnLeuGluArgTyrValArgAsnAspIleArgPheValAspTyrGluArgArgGluIleArgArgArgHisGlnVal-331
 381-LysGlyPheGluArgGlyHisThr-388
 420-AlaThrAlaGluGluLysGluAlaGlyMetLysLeuAspLysAsnGlnThrLeuLeuAspArgLeuGlnThrAspAlaArgPhe-447
 458-GluAspIleArgSerPheLeu-464
 493-AlaGluHisGluAspThrAla-499
 505-AspIleArgLysAspIleLeuAsp-512

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a645**AMPHI Regions - AMPHI**

21-AsnThrLeuAsnArgCysCysLys-28
 87-ArgThrLeuProSerLeuAsnGlyLeuThrLys-97
 149-ThrProLysArgCysSerSerSerIle-157
 163-PheLeuAsnPheMetSerSerCysThrSerLeu-173
 210-SerAlaLysArgSer-214
 249-SerValLeuProLysPro-254

Antigenic Index - Jameson-Wolf

18-GluGlnSerAsnThrLeuAsnArgCysCysLysLysSerArgMetThrCysSerSerSerArgSerArgSerCysProCys-44
 47-ProMetArgAlaSerGlySerArgValSerSerArgSerArgMet-61
 68-SerLeuCysArgLysAsnThrCysProProArgLeuSerSerArgAsnThrAlaSerArgThrLeuProSer-91
 99-LeuThrAlaArgArgArgLeuGly-106
 110-IleSerGluLysSerArgSerProSerSer-119
 137-ThrLeuAlaArgArgArgLeuSerCysSerPheArgThrProLysArgCysSerSer-155
 184-SerAlaMetProSer-188
 198-LeuLysArgGluArgLeuAla-204
 207-ThrGlyLysSerAlaLysArgSerAlaLys-216
 221-CysSerThrArgSerValValGlyAla-229
 242-AsnAlaAlaArgArgAlaThr-248
 250-ValLeuProLysProThrSerProHisThrArgArgSerIle-263

Hydrophilic Regions - Hopp-Woods

19-GlnSerAsnThrLeu-23
 25-ArgCysCysLysLysSerArgMetThrCysSerSerSerArgSerArgSerCysPro-43
 48-MetArgAlaSerGlySerArgValSerSerArgSerArgMet-61
 69-LeuCysArgLysAsnThrCysProProArgLeuSerSerArgAsnThrAlaSerArgThr-88
 99-LeuThrAlaArgArgArgLeuGly-106
 110-IleSerGluLysSerArgSerProSer-118
 137-ThrLeuAlaArgArgArgLeuSerCys-145
 148-ArgThrProLysArgCysSer-154
 198-LeuLysArgGluArgLeuAla-204
 209-LysSerAlaLysArgSerAlaLys-216
 242-AsnAlaAlaArgArgAlaThr-248
 254-ProThrSerProHisThrArgArgSerIle-263

a647**AMPHI Regions - AMPHI**

38-GlyLysValCysArgCysPheGluGlnVal-47
 69-ThrValPheArgGlnIleIleArgIleValAspHisAla-81

Antigenic Index - Jameson-Wolf

26-GlyLeuValLysGluArgAlaArg-33
 39-LysValCysArgCysPhe-44
 54-GlyThrValGlyGlnThrGluArgGlyAla-63
 79-AspHisAlaAspThrGluArgThrAlaAlaHisSerGlyGlyThrArgGly-95

Hydrophilic Regions - Hopp-Woods

26-GlyLeuValLysGluArgAlaArg-33
 40-ValCysArgCysPhe-44
 56-ValGlyGlnThrGluArgGlyAla-63
 79-AspHisAlaAspThrGluArgThrAlaAla-88

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AMPHI Regions - AMPHI

7-ArgIleGluArgAlaValArg-13
 15-AlaValIleAspValLeuAsnValAsp-23
 44-AlaLeuAlaAspIleArgValLeu-51
 94-AlaValAspLeuHisAlaValIleLysLeuThrAspThrVal-107
 127-GlnGlyValGluGlnGly-132
 152-PheLysGluGlyAsn-156
 182-AlaArgThrLeuGlyAsnValPheHis-190
 194-GlySerGlyValAspGlyIleGlnAlaValValAlaPheAspGlnTyrAla-210

Antigenic Index - Jameson-Wolf

1-MetAsnArgArgAsnAlaArgIleGluArgAlaValArg-13
 23-AspAlaProGlySerGlyThrLeuLeuHisGlnArgGlyLysGlnValGlySerArgAsnAspAlaLeuAla-46
 65-GlyLysLysArgPheValGlnSerArgAsnLeuValGlyArgLysGlnArgAsn-82
 125-MetProGlnGlyValGluGlnGlyCysArg-134
 142-ArgThrGlyPheAspCysArgLeuLysHisPheLysGluGlyAsnAla-157
 172-SerAlaAspThrSerGlyIleAspAlaAspAlaArgThr-184
 191-AsnArgAlaGlySerGlyValAspGly-199

Hydrophilic Regions - Hopp-Woods

1-MetAsnArgArgAsnAlaArgIleGluArgAlaValArg-13
 33-GlnArgGlyLysGlnValGlySerArgAsnAspAlaLeuAla-46
 65-GlyLysLysArgPheValGln-71
 74-AsnLeuValGlyArgLysGlnArgAsn-82
 127-GlnGlyValGluGlnGlyCysArg-134
 143-ThrGlyPheAspCysArgLeuLysHisPheLysGluGlyAsnAla-157
 172-SerAlaAspThrSerGlyIleAspAlaAspAlaArgThr-184

a649**AMPHI Regions - AMPHI**

6-LeuSerAlaIleLeuGlyLeuVal-13
 27-ArgAspThrLysHisIleArgLysAlaAsn-36
 57-SerGlnGlyAsnVal-61
 63-GluLeuArgGluAsnLys-68
 71-ArgLysAlaPheArgSerLeu-77

Antigenic Index - Jameson-Wolf

20-GlyThrSerGluProAlaHisArgAspThrLysHisIleArgLysAlaAsnLys-37
 40-LeuHisProGluCysArgLysTyrLeuGluArgArgAlaAla-53
 56-ArgSerGlnGlyAsnValGlnGluLeuArgGluAsnLysLysAlaArgLysAlaPheArgSerLeuProTyrLysGluGlnLysThrGlnCys-86
 92-AlaPheAspAspPheAspGlySerArgPheArgArg-103

Hydrophilic Regions - Hopp-Woods

20-GlyThrSerGluProAlaHisArgAspThrLysHisIleArgLysAlaAsnLys-37
 42-ProGluCysArgLysTyrLeuGluArgArgAlaAla-53
 59-GlyAsnValGlnGluLeuArgGluAsnLysLysAlaArgLysAlaPheArg-75
 78-ProTyrLysGluGlnLysThrGlnCys-86
 92-AlaPheAspAspPheAspGlySerArgPheArgArg-103

a650**AMPHI Regions - AMPHI**

15-SerValCysProGly-19
 57-LeuTrpSerGluLeuArgGln-63

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72-ProGluLeuValArgArgHisGlu-79
 89-PheAsnArgValIleAsn-94
 137-SerGlyLeuTrpGln-141
 173-AsnTyrLeuGlnTyrLeuTyrGlyLeuPheGlyAspTrpPro-186
 198-AsnValGlyArgAlaIleAsnArgAlaArg-207
 218-LeuArgMetProAsnGluThr-224
 269-GluAlaIleAlaArgLeuAlaGlyIleThrGlnSer-280
 314-SerAsnTyrLeuAsnAlaAlaProAsp-322
 341-IleSerThrAlaThrGlyMet-347
 349-IleAlaAspIleLysArgLeuAsnAsnLeu-358
 376-LysThrLeuGlnThrAlaSerGlu-383
 433-ValArgThrXxxThr-437

Antigenic Index - Jameson-Wolf

1-MetSerLysLeuLys-5
 24-GlnAsnThrSerSerHis-29
 38-LeuAsnSerSerIleLeuAspLeuProProThrLysGlnTyrPhe-52
 59-SerGluLeuArgGlnGlyPheArgMetGlyGluValAsnProGluLeuValArgArgHisGluSerLysPheIle-83
 92-ValIleAsnArgSerArgProTyr-99
 105-AsnGluValLysLysArgAsnMetProAla-114
 128-ThrLysAlaLysSerHisValGlyAlaSerGly-138
 145-AlaThrGlyArgHisTyrGlyLeuGluLysThrProValTyrAspGlyArgHisAspIle-164
 192-TyrAsnTrpGlyGluGlyAsnValGlyArgAlaIleAsnArgAlaArgAlaGlnGlyLeuGluProThrTyrGluAsnLeuArgMetProAsnGluThrArgAsnTyrVal-228
 247-AsnIleSerAspIleAspAsnLysProTyr-256
 259-AlaValGluProAspArgProLeuAspAsnGluAlaIleAla-272
 294-PheIleProLysSerLysArgLysLeu-302
 318-AsnAlaAlaProAspSer-323
 332-ProAlaAlaLysThrSerLeuSerAspIleSerThr-343
 350-AlaAspIleLysArgLeuAsnAsnLeuAsnGly-360
 370-LeuValAlaLysAsnGlyLysThrLeuGlnThrAlaSer-382
 388-IleAspIleAspAsnThrProAsnThrTyrArgSerAsnMetProAlaGlyThr-405
 411-AlaArgIleArgProAlaAla-417
 428-LeuProGlnLysThrValArgThrXxxThrArgSerProCysProTyrCys-444
 446-ThrCysProCysAspSerArgSerAlaThrSerAsnArgLysThrAspArgHisAlaVal-465

Hydrophilic Regions - Hopp-Woods

1-MetSerLysLeuLys-5
 61-LeuArgGlnGlyPheArgMetGlyGluValAsnProGluLeuValArgArgHisGluSerLysPhe-82
 92-ValIleAsnArgSerArgPro-98
 105-AsnGluValLysLysArgAsnMetProAla-114
 128-ThrLysAlaLysSerHisVal-134
 150-TyrGlyLeuGluLysThrProValTyrAspGlyArgHisAspIle-164
 202-AlaIleAsnArgAlaArgAlaGlnGlyLeu-211
 213-ProThrTyrGluAsnLeuArgMetProAsnGluThrArgAsnTyrVal-228
 249-SerAspIleAspAsn-253
 260-ValGluProAspArgProLeuAspAsnGluAlaIleAla-272
 296-ProLysSerLysArgLysLeu-302
 334-AlaLysThrSerLeu-338
 350-AlaAspIleLysArgLeuAsn-356
 373-LysAsnGlyLysThrLeuGlnThrAlaSer-382
 389-AspIleAspAsnThrProAsnThrTyr-397
 411-AlaArgIleArgPro-415
 431-LysThrValArgThrXxxThrArgSer-439

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447-CysProCysAspSerArgSerAlaThrSerAsnArgLysThrAspArgHisAlaVal-465

a652-1**AMPHI Regions - AMPHI**

6-AspIlePheAlaArg-10

52-ArgAspGlyAspLys-56

62-LysGlyValLeuLysAlaValGluHisValAsnAsnGlnIleAlaGlnAla-78

130-LeuTyrArgTyrLeuGlyGlyAlaGlyPro-39

149-ValIleAsnGlyGly-153

173-LysSerPheArgGluAlaLeuArgCys-181

184-GluIlePheHisAlaLeuLysLys-191

266-AlaGluPheAlaGluTyrLeuGluGlyLeuValAsn-277

323-AlaGluGlyIleGluLysGlyVal-330

338-ValAsnGlnIleGlyThrLeuSerGluThrLeuLysAlaValAspLeuAlaLys-355

377-AspLeuAlaValAla-381

391-SerLeuSerArgSerAspArgMetAlaLysTyrAsnGlnLeuLeuArgIleGluGluLeuAlaGluAlaAla
Asp

Tyr-417

Antigenic Index - Jameson-Wolf

11-GluIleLeuAspSerArgGlyAsnProThrValGlu-22

36-AlaValProSerGlyAlaSerThrGlyGlnLysGluAlaLeuGluLeuArgAspGlyAspLysSerArgTyrS
erGlyLysGlyValLeuLysAlaValGluHisValAsn-72

83-AspAlaAsnGluGlnSerTyr-89

97-LeuAspGlyThrGluAsnLysGlyAsnLeuGly-107

121-AlaAlaAlaGluAspSerGlyLeuPro-129

135-GlyGlyAlaGlyProMet-140

151-AsnGlyGlyGluHisAlaAsnAsnSerAsn-161

173-LysSerPheArgGluAlaLeuArgCysGlyAla-183

190-LysLysLeuCysAspSerLysGlyPheProThrThrValGlyAspGluGlyGlyPhe-208

211-AsnLeuAsnSerHisLysGluAlaLeu-219

243-CysAlaSerSerGluPheTyrLysAspGlyLysTyrHisLeuGluAlaGluGlyArgSerTyrThrAsn-26
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283-SerIleGluAspGlyMetAspGluAsnAspTrpGluGly-295

299-LeuThrGluLysLeuGlyGlyLys-306

309-LeuValGlyAspAspLeu-314

318-AsnProLysIleLeuAlaGluGlyIleGluLysGlyVal-330

352-AspLeuAlaLysArgAsnArgTyrAla-360

363-MetSerHisArgSerGlyGluThrGluAspSerThrIle-375

388-LysThrGlySerLeuSerArgSerAspArgMetAlaLys-400

405-LeuArgIleGluGluGluLeuAlaGluAlaAlaAspTyrProSerLys-420

Hydrophilic Regions - Hopp-Woods

11-GluIleLeuAspSerArgGlyAsnProThrValGlu-22

43-ThrGlyGlnLysGluAlaLeuGluLeuArgAspGlyAspLysSerArgTyrSerGly-61

63-GlyValLeuLysAlaValGlu-69

97-LeuAspGlyThrGluAsnLysGlyAsnLeu-106

121-AlaAlaAlaGluAspSerGly-127

153-GlyGluHisAlaAsn-157

173-LysSerPheArgGluAlaLeuArgCysGlyAla-183

190-LysLysLeuCysAspSerLysGly-197

202-ValGlyAspGluGlyGlyPhe-208

213-AsnSerHisLysGluAlaLeu-219

247-GluPheTyrLysAspGlyLysTyrHisLeuGluAlaGluGlyArgSerTyrThr-264

283-SerIleGluAspGlyMetAspGluAsnAspTrpGluGly-295

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299-LeuThrGluLysLeuGlyGly-305
 321-IleLeuAlaGluGlyIleGluLysGlyVal-330
 352-AspLeuAlaLysArgAsnArgTyr-359
 364-SerHisArgSerGlyGluThrGluAspSerThrIle-375
 391-SerLeuSerArgSerAspArgMetAlaLys-400
 405-LeuArgIleGluGluGluLeuAlaGluAlaAlaAspTyrProSer-419

a653**AMPHI Regions - AMPHI**

6-MetArgMetProGluValThrLysGlyPheSerGlySer-18
 60-ThrMetArgLysProArgLeuThr-67
 75-AlaLeuIlePheThrCysPheAla-82
 96-ThrAlaLeuAlaAlaIleThrCysIle-104
 111-LeuGlyLysMetGluGluPheAsn-118

Antigenic Index - Jameson-Wolf

4-GluProMetArgMetProGluValThrLysGlyPheSerGlySer-18
 45-GlyCysArgSerThrArgLysThr-52
 56-ValArgProGluThrMetArgLysProArgLeuThrAsnSerSerAla-71
 86-AsnSerGlyCysAsnAla-91
 103-CysIleSerGlyProProCysArgLeuGlyLysMetGluGlu-116
 125-SerArgHisLysIleThrProProArgGlyProArgArgVal-138
 145-ThrLysSerGlnAsnGlyThrGly-152
 154-GlyTyrSerProProAlaThrArgProAla-163

Hydrophilic Regions - Hopp-Woods

4-GluProMetArgMetProGluValThrLys-13
 47-ArgSerThrArgLysThr-52
 57-ArgProGluThrMetArgLysProArgLeuThrAsn-68
 107-ProProCysArgLeuGlyLysMetGluGlu-116
 126-ArgHisLysIleThrProProArgGlyProArg-136
 158-ProAlaThrArgProAla-163

a656**AMPHI Regions - AMPHI**

14-MetAlaArgThrLeuGlyAlaProGlu-22
 42-ArgArgProSerThr-46
 92-LeuAlaSerLeuAsnLysSerCys-99

Antigenic Index - Jameson-Wolf

6-GlySerThrSerSer-10
 19-GlyAlaProGluSerValProAlaGlyLysValAlaAla-31
 40-SerPheArgArgProSerThrLeuGlu-48
 74-ArgProThrSerLeuArgProLysSerIleAsn-84
 94-SerLeuAsnLysSerCysSerLeuAlaArgSerSerAlaGlyValLeuProArgArgArgValProAla-116
 120-ThrMetThrSerSerArgSerArgArgThrArgIleSerGlyGluGluProThrMetTrpLysSerProLysSer-144

Hydrophilic Regions - Hopp-Woods

40-SerPheArgArgProSerThr-46
 76-ThrSerLeuArgProLysSer-82
 99-CysSerLeuAlaArgSerSer-105
 109-LeuProArgArgArgValProAla-116
 121-MetThrSerSerArgSerArgArgThrArgIleSerGlyGluGluProThrMet-138

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140-LysSerProLysSer-144
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AMPHI Regions - AMPHI

9-ProAlaMetLeuGly-13
20-LeuGlyArgMetPheThr-25
62-ThrAlaLeuGluGluLeuAlaLysCysAlaAla-72
85-MetArgPheLeuAlaLys-90
140-PheLeuProGlyIleLeuLysThr-147
161-LysThrValAspGluLeuLysAla-168
178-CysValLeuGluLysMetValAsp-185
203-GlnThrPheAspProAlaGluAsnIle-211
232-GlnGlnAlaArgGlnMetAlaGlnArgLeuAlaAspGluLeuAsnTyrValGlyValLeu-251
279-HisThrValAspAlaCysAlaAla-286
314-AsnIleLeuGlyAsp-318

Antigenic Index - Jameson-Wolf

1-MetLysAsnIleSerLeu-6
16-GlyGlyGlyGlnLeuGlyArg-22
37-ValLeuAspProAsnProAsnAlaPro-45
57-ProPheAspAsnGlnThrAlaLeuGluGluLeuAlaLys-69
75-ThrGluPheGluAsnValAsnAlaAspAla-84
91-HisThrAsnValSerProSerGlyAsp-99
106-AsnArgIleGlnGluLysAlaTrpIle-114
128-CysLysAlaGluAspIleThrGluGluSerIle-138
150-LeuGlyTyrAspGlyLysGlyGlnIleArgValLysThrValAspGluLeuLysAlaAlaPheAlaGluHis
ArgGlyValAspCysValLeu-180
182-LysMetValAspLeuArgGlyGluIle-190
196-ArgLeuAsnAsnAspAsnValGlnThrPheAspProAlaGluAsnIleHisGluAsnGly-215
230-IleGlnGlnGlnAlaArgGlnMetAla-238
269-IleAlaProArgProHisAsnSerGlyHisHis-279
288-GlnPheGlnGlnGlnVal-293
300-ProProAlaAspThrLysLeuLeuSer-308
319-ValTrpGlnGluAspGlyGlyGluProAspTrp-329
331-ProLeuGlnSerArgProAspAlaHis-339
344-GlyLysLysThrAlaHisLysGlyArgLysMetGly-355
360-LeuSerThrAspSerAspThrAlaPheGlnGluAlaLysLysLeuHis-375

Hydrophilic Regions - Hopp-Woods

62-ThrAlaLeuGluGluLeuAlaLys-69
75-ThrGluPheGluAsnValAsn-81
128-CysLysAlaGluAspIleThrGluGluSerIle-138

152-TyrAspGlyLysGlyGlnIleArgValLysThrValAspGluLeuLysAlaAlaPheAlaGluHisArgGly
ValAspCysValLeu-180
182-LysMetValAspLeuArgGlyGluIle-190
197-LeuAsnAsnAspAsn-201
206-AspProAlaGluAsnIleHis-212
230-IleGlnGlnGlnAlaArgGlnMetAla-238
269-IleAlaProArgProHisAsn-275
301-ProAlaAspThrLysLeu-306
320-TrpGlnGluAspGlyGlyGluProAsp-328
334-SerArgProAspAla-338
344-GlyLysLysThrAlaHisLysGlyArgLysMetGly-355
362-ThrAspSerAspThrAlaPheGlnGluAlaLysLysLeuHis-375

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a658**AMPHI Regions - AMPHI**

28-ArgGlnTyrAlaAspValValGlnPheIleGlyGlnThrLeuArgHisLeuSerArgLeuLeuLeuAsn-50
57-TrpAspAspGlyVal-61
68-ValAsnValPheGlyArgIleGluSer-76
94-GlnValHisHisPhePheGlnAsnAlaIleHisAla-105
128-IleAlaGlnCysSerGlyPheGlnAspAlaGlyGln-139
143-AlaPhePheSerAspValPheGly-150

Antigenic Index - Jameson-Wolf

6-ValArgThrArgArgAspPheValAspAspGlnPheMetArgValAlaAspAsnLysHisPhe-26
55-SerGlyTrpAspAspGlyValGlyGluAspThrVal-66
72-GlyArgIleGluSer-76
84-ThrAlaTyrAspAsnGlyAsn-90
108-PheGlyLysArgGlyPhe-113
131-CysSerGlyPheGlnAspAlaGlyGlnLys-140
155-LeuIleArgArgGlyLeuGln-161
174-ValLeuArgAspGlyAsnAla-180
189-MetPheGlyGluLysThrHisArgIleGly-198
202-PheGluLeuGlyArgAsnSerArgThr-210
216-GlnSerGlyLeuValValLysArgArgThrGln-226
230-GlyLysPheArgCysArgArg
IleArgVal-239
251-PheGlySerAsnSerLysHisSerAla-259

Hydrophilic Regions - Hopp-Woods

6-ValArgThrArgArgAspPheValAsp-14
16-GlnPheMetArgValAlaAspAsnLysHisPhe-26
56-GlyTrpAspAspGlyValGlyGluAspThrVal-66
72-GlyArgIleGluSer-76
135-GlnAspAlaGlyGln-139
174-ValLeuArgAspGlyAsnAla-180
190-PheGlyGluLysThrHisArgIleGly-198
203-GluLeuGlyArgAsnSerArg-209
220-ValValLysArgArgThrGln-226
230-GlyLysPheArgCysArgArgIleArgVal-239
253-SerAsnSerLysHisSerAla-259

a661**AMPHI Regions - AMPHI**

19-GlyIleThrAspLysProPheArgArgLeuCysArgAspPheGlyAlaGly-35
37-AlaValCysGluMetLeu-42
75-AspProGlnGlnMetAlaAspAlaAla-83
122-AlaAlaIleLeuGluAlaValValLys-130
152-ProValIleAlaLysIleAlaGlu-159
222-TyrAspArgAlaArgArg-227
235-ProArgPheGluThrLeuArgArgThrArgCys-245
248-AlaCysLeuGluPheGlyArgMetTyrArgHisTyrPheGluPro-262
267-AlaArgValLeuArgArgHis-273

Antigenic Index - Jameson-Wolf

20-IleThrAspLysProPheArgArgLeuCysArgAspPheGlyAlaGly-35

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42-LeuThrSerAspProThrLeuArgAsnThrArgLysThrLeuHisArgSerAspPheAlaAspGluGlyGly-65
 72-AlaGlySerAspProGlnGlnMetAlaAspAlaAlaArg-84
 97-AsnMetGlyCysProAlaLysLysValCys-106
 143-GlyTrpHisAspAspHisGlnAsnLeu-151
 157-IleAlaGluAspCysGly-162
 168-XxxProArgThrHisAla-173
 176-AsnValGlnArgArgSerGlyLeuArgProAspCysArgAsnGlnMetProSerGluHisProGlyLeuGlyGlnArgArgHisTyrLeuAlaAlaLysSerProSerArgProGlnThrAsnArgArgArgArgHisTyrAspArgAlaArgArgAlaArgGln-230
 235-ProArgPheGluThrLeuArgArgThrArgCysPhe-246
 256-TyrArgHisTyrPheGluProHisProSerHisAlaArgValLeuArgArgHisArgArgCysAlaHisArgThrGlnThrHisArgLeuValHisArgArgAsnAlaArgArgArgThrAspThrSer-298

Hydrophilic Regions - Hopp-Woods

20-IleThrAspLysProPheArgArgLeuCysArgAspPhe-32
 46-ProThrLeuArgAsnThrArgLysThrLeuHisArgSerAspPheAlaAspGluGlyGly-65
 73-GlySerAspProGlnGlnMetAlaAspAlaAlaArg-84
 100-CysProAlaLysLysValCys-106
 157-IleAlaGluAspCysGly-162
 176-AsnValGlnArgArgSerGlyLeuArgProAspCysArgAsnGlnMetProSerGluHisProGlyLeuGlyGlnArgArgHisTyrLeu-205
 208-LysSerProSerArgProGlnThrAsnArgArgArgArgHisTyrAspArgAlaArgArgAlaArgGln-230
 238-GluThrLeuArgArgThrArgCys-245
 268-ArgValLeuArgArgHisArgArgCysAlaHisArgThrGlnThr-282
 285-LeuValHisArgArgAsnAlaArgArgArgThrAspThrSer-298
a663

AMPHI Regions - AMPHI

19-ProPheAlaLeuLeuHisLysLeuAlaAspLeuThrGlyLeuLeuAlaTyr-35
 66-LysGlnHisPheLysHisMetAlaLysLeu-75
 87-AlaGlyArgLeuLysSerLeuValArg-95
 168-GluGlyLeuArgAlaLeuValLysGlnPheArgLys-179
 209-ThrIleThrGlyLeuSerArgIleAlaAlaLeuAlaAsn-221
 243-ProAlaTrpGluSer-247
 258-GlnArgMetAsnArgPheIleGluGluArgValArgGluHis-271

Antigenic Index - Jameson-Wolf

38-ValLysProArgArgArgIleGlyGlu-46
 56-TrpAspGlyLysLysArgLysThrValLeu-65
 87-AlaGlyArgLeuLysSer-92
 94-ValArgTyrArgAsnLysHisTyrLeuAsp-103
 105-AlaLeuAlaAlaGlyGluLys-111
 139-TyrSerHisGlnLysAsnLysIleLeuAsp-148
 150-GlnIleLeuLysGlyArgAsnArgTyr-158
 166-ArgThrGluGlyLeuArgAlaLeu-173
 175-LysGlnPheArgLysSerSerAla-182
 188-ProAspGlnAspPheGlyArgAsnAspSerVal-198
 229-ProValArgGluAlaAspAsnThr-236
 243-ProAlaTrpGluSerPheProSerGluAspAlaGlnAlaAspAlaGlnArgMetAsnArgPheIleGluGluArgValArgGluHisProGlu-273
 280-LysArgPheLysThrArgProGluGlySerProAspPheTyr-293

Hydrophilic Regions - Hopp-Woods

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39-LysProArgArgArgIleGlyGlu-46
56-TrpAspGlyLysLysArgLysThrValLeu-65
88-GlyArgLeuLysSer-92
94-ValArgTyrArgAsn-98
105-AlaLeuAlaAlaGlyGluLys-111
142-GlnLysAsnLysIleLeuAsp-148
150-GlnIleLeuLysGlyArgAsnArgTyr-158
166-ArgThrGluGlyLeuArgAlaLeu-173
176-GlnPheArgLysSerSer-181
190-GlnAspPheGlyArgAsnAspSerVal-198
229-ProValArgGluAlaAspAsn-235
248-PheProSerGluAspAlaGlnAlaAspAlaGlnArgMetAsnArgPheIleGluGluArgValArgGluHis
ProGlu-273
280-LysArgPheLysThrArgProGluGlySerPro-290

a664**AMPHI Regions - AMPHI**

28-AlaHisArgMetCys-32
47-AlaAspValPheAspThrAlaHisGlyAlaAlaGly-58
88-AlaArgProValValGluIle-94

Antigenic Index - Jameson-Wolf

25-SerGlyGlyAlaHisArgMetCysGlyArg-34
48-AspValPheAspThrAlaHisGly-55
73-PheLeuGlnArgLysLeuGluPro-80
108-IleGlyGlyGlyThrAlaValGlyLysAspGluLeuGlyValLysAspValGln-125
137-AlaHisGlyAspAspHisGluAsn-144
164-AlaIleProArgGlnSerArgProTrp-172
175-ProLeuArgTrpCysLysThrArgPhe-183

Hydrophilic Regions - Hopp-Woods

74-LeuGlnArgLysLeuGluPro-80
113-AlaValGlyLysAspGluLeuGlyValLysAspValGln-125
137-AlaHisGlyAspAspHisGluAsn-144
166-ProArgGlnSerArg-170

a665-1**AMPHI Regions - AMPHI**

6-HisTyrLeuLysAspTyrGln-12
105-LeuTyrAlaSerAla-109
111-AsnLeuPheThrGlnCysGluProGluGlyPheArgLysIleThr-125
132-AspValMetSerLysPheThrThrThr-140
167-ArgHisTrpValLysTrpGluAspProPhe-176
225-SerLeuLysAsnAlaMetLys-231
286-GlyIleGluSerValVal-291
294-GluTyrPheHisAsnTrpThr-300
307-ArgAspTrpPheGlnLeuSerLeu-314
329-AspArgAlaSerArgAlaValArgArgIleGluAsnIleArgLeuLeuArgGln-346
360-ValArgProAlaArgTyrGluGluMetAsnAsnPheTyrThr-373
380-GlyAlaGluValValArgMetTyrHisThrLeu-390
396-PheGlnLysGlyMetLys-401
520-ThrGluAlaValValProSerLeuLeuArgGlyPheSerAlaPro-534
555-AspAlaPheThrArgTrpGluAlaAlaGln-564
575-LeuAlaAlaLeuSerAspGlyValGluLeuProLysHisGluLysLeuLeuAlaAlaValGlu-595

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603-LeuAspAsnAlaPheLysAlaLeu-610
 622-AspGlyAlaGluAsnIleAspProLeu-630
 648-LeuProLysTrpHisGluLeuAsnArg-656
 6674-lyTrpArgThrLeuArgAsnValCysArgAla-684
 696-ThrValAlaGluLysTyrAlaGluMetAlaGlnAsnMet-708
 712-TrpGlyIleLeuSer-716
 728-ArgLeuLeuAlaGlnPheAlaAspLysPheSer-738
 758-AspThrLeuGlnGlnValGlnThrAla-766
 782-SerLeuIleGlySerPheSerArgAsnVal-791
 822-ArgLeuValGlnAlaPheAsnLeuCysAsnLysLeu-833

Antigenic Index - Jameson-Wolf

8-LeuLysAspTyrGlnThrProAlaTyr-16
 26-AspIleAsnGluPro-30
 34-ValLysSerArgLeuThrValGluProLysArgValGlyGlu-47
 49-LeuValLeuAspGlySerAla-55
 79-AlaAspValProSerGluArgPheThrVal-88
 90-ValGluThrGluIleLeuProAlaGluAsnLysSerLeu-102
 114-ThrGlnCysGluProGluGlyPheArgLys-123
 128-IleAspArgProAspValMetSer-135
 142-ValAlaAspLysLysArgTyrPro-149
 154-AsnGlyAsnLysIleAspGlyGlyGluTyrSerAspGlyArgHisTrpValLysTrpGluAspProPheAla
 LysProSer-180
 191-AlaValThrGluAspTyr-196
 200-MetSerGlyArgAsnValLysIle-207
 211-ThrThrGluAlaAspLysProLysVal-219
 230-MetLysTrpAspGluThrArgPhe-237
 255-AsnMetGlyAlaMetGluAsnLysGlyLeu-264
 275-AspSerArgThrAlaThrAspThrAspPheGluGlyIleGlu-288
 295-TyrPheHisAsnTrpThrGlyAsnArgValThrCysArgAspTrp-309
 313-SerLeuLysGluGly-317
 322-ArgAspGlnGluPheSerGlyAspArgAlaSerArgAlaValArgArgIleGluAsn-340
 347-HisGlnPheProGluAspAlaGlyProThrAlaHisProValArgProAlaArgTyrGluGluMetAsn-36
 9
 376-ValTyrGluLysGlyAlaGluVal-383
 394-GluGlyPheGlnLysGlyMet-400
 404-PheGlnArgHisAspGlyGlnAlaValThrCysAspAspPheArg-418
 437-SerGlnAlaGlyThrPro-442
 446-AlaGlnGlyArgLeuLysAsnAsnVal-454
 459-IleLysGlnThrValProProThrProAspMetAlaAspLysGlnPro-474
 485-AsnCysAsnGlyGluAlaVal-491
 494-AspTyrGlnGlyLysArgAlaThrGlu-502
 509-GluAlaGluGlnThrPhe-514
 537-LeuAsnTyrProTyrSerAspAspAspLeu-546
 552-HisAspSerAspAla-556
 578-LeuSerAspGlyValGluLeuProLysHisGluLysLeu-590
 594-ValGluLysValIleSerAspAspLeuLeu-603
 614-ValProSerGluAlaGluLeuTrpAspGlyAlaGluAsnIleAspProLeuArg-631
 633-HisGlnAlaArgGluAlaLeu-639
 652-HisGluLeuAsnArgGlnAlaAlaLysGlnGluAsnGlnSerTyrGluTyrSerProGluAlaAlaGly-67
 4
 677-ThrLeuArgAsnValCys-682
 689-AlaAspProAlaHis-693
 696-ThrValAlaGluLysTyrAlaGlu-703
 719-AsnGlyAsnGluSerAspThrArgAsnArgLeu-729

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733-PheAlaAspLysPheSerAspAspAlaLeuVal-743
752-GlySerSerArgArgSerAspThrLeuGln-761
768-GlnHisProLysPheSerLeuGluAsnProAsnLysAlaArgSer-782
785-GlySerPheSerArgAsnValPro-792
795-HisAlaGluAspGlySerGlyTyrArgPheIleAla-806
808-LysValIleGluIleAspArgPheAsnProGlnVal-819
831-AsnLysLeuGluProHisArgLysAsnLeuVal-841
844-AlaLeuGlnArgIleArgAlaGlnGluGlyLeuSerLysAspValGlyGluIleVal-862

Hydrophilic Regions - Hopp-Woods

34-ValLysSerArgLeuThrValGluProLysArgValGlyGlu-47
81-ValProSerGluArgPheThrVal-88
90-ValGluThrGluIleLeuProAlaGluAsnLysSer-101
116-CysGluProGluGlyPheArg-122
129-AspArgProAspValMetSer-135
142-ValAlaAspLysLysArgTyr-148
154-AsnGlyAsnLysIleAspGlyGlyGluTyrSerAspGlyArgHis-168
170-ValLysTrpGluAspProPheAla-177
201-SerGlyArgAsnValLys-206
213-GluAlaAspLysProLysVal-219
230-MetLysTrpAspGluThrArgPhe-237
258-AlaMetGluAsnLysGly-263
275-AspSerArgThrAlaThrAspThrAspPheGluGlyIleGlu-288
313-SerLeuLysGluGly-317
322-ArgAspGlnGluPheSerGlyAspArgAlaSerArgAlaValArgArgIleGluAsn-340
348-GlnPheProGluAspAlaGlyPro-355
361-ArgProAlaArgTyrGluGluMetAsn-369
376-ValTyrGluLysGlyAlaGluVal-383
394-GluGlyPheGlnLysGlyMet-400
406-ArgHisAspGlyGln-410
413-ThrCysAspAspPheArg-418
446-AlaGlnGlyArgLeuLysAsnAsnVal-454
467-ProAspMetAlaAspLysGlnPro-474
495-TyrGlnGlyLysArgAlaThrGlu-502
541-TyrSerAspAspAspLeu-546
552-HisAspSerAspAla-556
580-AspGlyValGluLeuProLysHisGluLysLeu-590
594-ValGluLysValIleSer-599
616-SerGluAlaGluLeu-620
622-AspGlyAlaGluAsnIleAspPro-629
633-HisGlnAlaArgGluAlaLeu-639
652-HisGluLeuAsnArgGlnAlaAlaLysGlnGluAsnGlnSer-665
689-AlaAspProAlaHis-693
696-ThrValAlaGluLysTyrAlaGlu-703
719-AsnGlyAsnGluSerAspThrArgAsnArgLeu-729
733-PheAlaAspLysPheSerAsp-739
753-SerSerArgArgSerAspThr-759
776-AsnProAsnLysAlaArgSer-782
795-HisAlaGluAspGlySerGly-801
808-LysValIleGluIleAspArgPheAsn-816
831-AsnLysLeuGluProHisArgLysAsnLeuVal-841
844-AlaLeuGlnArgIleArgAlaGlnGluGlyLeuSerLysAspValGlyGluIleVal-862

a666**AMPHI Regions - AMPHI**

-564-

89-GlyTyrAspIleLeuLysGlnGlyGlySer-98
 162-LeuLysPheMetGluAlaVal-168

Antigenic Index - Jameson-Wolf

5-AsnHisGlnSerAsnSerGlyGluGlyValLeu-15
 40-AsnGlnGlyLysValAsnThr-46
 54-AlaAspAlaHisThrProGluHisAlaThr-63
 65-LeuThrGluGlnLysGln-70
 92-IleLeuLysGlnGlyGlySerAlaAla-100
 114-GluProGlnSerSerGlyLeuGlyGly-122
 130-AspAsnThrAlaLysThr-135
 137-ThrThrPheAspGlyArgGluThrAlaPro-146
 154-PheLeuAspLysAspGlyGlnPro-161

Hydrophilic Regions - Hopp-Woods

8-SerAsnSerGlyGlu-12
 40-AsnGlnGlyLysValAsnThr-46
 55-AspAlaHisThrProGluHis-61
 65-LeuThrGluGlnLysGln-70
 96-GlyGlySerAlaAla-100
 139-PheAspGlyArgGluThrAlaPro-146
 154-PheLeuAspLysAspGlyGlnPro-161
a667

AMPHI Regions - AMPHI

49-IleAlaAspPheLeuGlnProAlaArgValGluArgLeuProHisLeuAlaAla-66
 74-LysThrAlaGlnPhe-78
 115-IleAlaAlaValAlaGluIle-121
 128-IleAlaArgGlyValAspAlaValGlnArg-137
 152-ThrAspGlnLeuArgArgMetPhePheAsnGlnLeuGluLysPheGlyAspAsnHis-170
 174-ValIleHisLeuAlaAspCysThrAsp-182
 201-LysMetMetLeuHisLysIleProThrArgLeu-211

Antigenic Index - Jameson-Wolf

11-IleValSerAspProLeuAsp-17
 27-SerAlaAlaAspGlnThrGluThrGln-35
 56-AlaArgValGluArgLeuPro-62
 71-LeuAlaArgLysThrAlaGln-77
 84-ArgHisIleArgProArgLeuValLysArgGluGlnIle-96
 130-ArgGlyValAspAlaValGln-136
 139-ValMetGlnAsnArgGlnValGlu-146
 151-ProThrAspGlnLeuArg-156
 163-LeuGluLysPheGlyAsp-168
 179-AspCysThrAspMet-183
 188-ProProThrHisAlaAlaArgAsnArgHisAsnLeu-199
 207-IleProThrArgLeu-211
 226-GlyGlnArgGlyArgGlnValIleGlnArgThrAspThrLeu-239
 247-IleGluSerGlnAsnArgGlyHisAspSer-256

Hydrophilic Regions - Hopp-Woods

11-IleValSerAspProLeu-16
 27-SerAlaAlaAspGlnThrGluThrGln-35
 56-AlaArgValGluArgLeuPro-62
 71-LeuAlaArgLysThrAlaGln-77

-565-

84-ArgHisIleArgProArgLeuValLysArgGluGlnIle-96
130-ArgGlyValAspAlaValGln-136
164-GluLysPheGlyAsp-168
191-HisAlaAlaArgAsnArgHisAsnLeu-199
227-GlnArgGlyArgGlnValIleGlnArgThrAspThr-238
249-SerGlnAsnArgGlyHisAsp-255

a669**AMPHI Regions - AMPHI**

24-LysLeuHisArgAlaPhe-29
59-GlnIlePheArgHisValGlnSer-66
79-LysProProAsnThrAla-84

Antigenic Index - Jameson-Wolf

1-MetArgArgIleIleLysLysHisGlnProValAsn-12
33-GlyArgLysArgProHisHisHisAspArgSerLeuArgArgGlnHisGlyIle-50
64-ValGlnSerSerAsnArgGlnAsnGlyArgGlnProValCysThrLysProProAsnThrAlaSer-85
100-AlaAspIleLysArgIleLeu-106

Hydrophilic Regions - Hopp-Woods

1-MetArgArgIleIleLysLysHisGlnPro-10
33-GlyArgLysArgProHisHisHisAspArgSerLeuArgArgGlnHisGly-49
65-GlnSerSerAsnArgGlnAsnGlyArgGlnProValCysThrLysProProAsn-82
100-AlaAspIleLysArgIleLeu-106

a670**AMPHI Regions - AMPHI**

10-ArgSerCysPheGly-14
16-ValLysAsnAlaSerGlyValSer-23
34-IleThrArgSerAla-38
77-ValGlySerSerAsnAsnIle-83
126-PheSerAlaCysSer-130

Antigenic Index - Jameson-Wolf

4-CysArgAsnCysLeuAlaArgSerCys-12
18-AsnAlaSerGlyValSerSerSerArgIleCysProLeuSer-31
33-LysIleThrArgSerAlaThrSerArgAlaAsnProIle-45
65-AsnThrSerProThrIleSerGlySerSerAlaGluValGlySerSerAsnAsnIleThrArgGlySerIleAlaLysProArgAlaIleAla-95
98-CysCysTrpProProGluSerTrpGluGlyLysAla-109
114-AlaSerProThrArgSerLysSerSer-122
145-AsnThrValArgCysGly-150

Hydrophilic Regions - Hopp-Woods

33-LysIleThrArgSerAlaThrSerArgAlaAsn-43
73-SerSerAlaGluValGlySer-79
87-SerIleAlaLysProArgAlaIleAla-95
116-ProThrArgSerLysSer-121

a671**AMPHI Regions - AMPHI**

96-ThrProArgIleAla-100
119-ArgLeuPheIleArgTyr-124

Antigenic Index - Jameson-Wolf

-566-

11-PheAsnAlaProAsnThrProProLysMetArgLeuAlaLysProLysProThrAlaGluThrAlaProValSerSerGluArg-38
 45-GlnAlaMetThrAsnArgGluMetAsnAspArgAlaAsnAlaAsnArgArgGlyTrpAsnAspAlaLysAlaMetSerAlaLysGlyAlaAlaLysSerLeuAlaLysLysLysAlaThrThr-85
 98-ArgIleAlaAspSerThrMet-104
 110-AlaGluThrArgArgSerAlaThrGlyArgLeu-120
 125-LeuThrGlyAspThr-129

Hydrophilic Regions - Hopp-Woods

16-ThrProProLysMetArgLeuAlaLysProLysProThrAlaGlu-30
 32-AlaProValSerSerGluArg-38
 47-MetThrAsnArgGluMetAsnAspArgAlaAsnAlaAsnArgArgGlyTrpAsnAspAlaLysAlaMetSerAlaLysGlyAlaAlaLysSerLeuAlaLysLysLysAlaThrThr-85
 110-AlaGluThrArgArgSerAlaThr-117
a672

AMPHI Regions - AMPHI

38-ArgAlaValAspIleIleLysAlaGlnLys-47
 50-AlaAlaLeuProProPheValSerValVal-59
 67-AlaGlnAsnIleArgArgIleLeuAlaGluValPro-78
 91-AlaPheCysArgGlnPheHisArgProTyr-100
 105-ArgValGlnThrAlaSerAspIleArgAsnAlaAlaAspArgPhe-119
 131-HisProSerGluTyrGly-136
 165-AsnValAspGluAlaIle-170
 173-ThrGlyAlaGluAla-177

Antigenic Index - Jameson-Wolf

1-MetArgLysIleArgThrLysIleCysGlyIleThrThrProGluAspAlaLeu-18
 34-ProGlnSerProArgAlaValAspIleIleLysAlaGlnLys-47
 65-GluSerAlaGlnAsnIleArgArgIleLeuAla-75
 84-PheHisGlyAspGluAspAlaPhe-92
 107-GlnThrAlaSerAspIleArgAsnAlaAlaAspArgPheProAspAla-122
 130-TyrHisProSerGluTyrGlyGlyThrGlyHisArgPheAsp-143
 149-GluTyrSerGlyLysPro-154
 159-GlyGlyLeuThrProGluAsnValAspGluAlaIleArg-171
 176-GluAlaValAspValSerGlyGlyValGluAlaSerLysGlyLysLysAspProAlaLys-195
 202-ThrAlaAsnArgLeuSerArg-208

Hydrophilic Regions - Hopp-Woods

1-MetArgLysIleArgThrLysIle-8
 13-ThrProGluAspAlaLeu-18
 36-SerProArgAlaValAsp-41
 43-IleLysAlaGlnLys-47
 66-SerAlaGlnAsnIleArgArgIleLeuAla-75
 85-HisGlyAspGluAspAlaPhe-92
 110-SerAspIleArgAsnAlaAlaAspArgPheProAsp-121
 164-GluAsnValAspGluAlaIleArg-171
 184-ValGluAlaSerLysGlyLysLysAspProAlaLys-195
 204-AsnArgLeuSerArg-208
a673

AMPHI Regions - AMPHI

84-LeuAsnAspArgLeuAsnGlnAsnValThrGluAlaLeuGlyGlyValAspVal-101
 110-ArgPheThrAspAla-114
 117-ValValLeuLysGlnLeuProLys-124

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172-ArgIleAlaAsnLeuLeuGluLeuIleLysProTyrLeu-184
 212-LysLeuPheArgTyrLeuGlyGluGlu-220
 261-GlyGluArgLeuLysLysIleSerThr-269
 275-MetGluLysLeuPhe-279
 285-LeuLysValTrpValLysValLys-292

Antigenic Index - Jameson-Wolf

7-LeuAlaGlyGluArgAlaAlaAspGlyTyrArg-17
 24-ValGlyArgProAsnValGlyLysSerThr-33
 44-SerIleThrSerLysLysAlaGlnThrThrArgAsnArgValThr-58
 61-TyrThrAspAspThrAla-66
 73-ThrProGlyPheGlnThrAspHisArgAsnAlaLeuAsnAspArgLeuAsnGlnAsnValThrGlu-94
 110-ArgPheThrAspAlaAspArgValVal-118
 121-GlnLeuProLysHisThr-126
 134-LysIleAspLysAspLysAlaLysAspArgTyrAla-145
 153-ValArgAlaGluPhe-157
 180-IleLysProTyrLeuProGluSerVal-188
 190-MetTyrProGluAspMetValThrAspLysSerAlaArg-202
 208-IleValArgGluLysLeuPhe-214
 217-LeuGlyGluGluLeuPro-222
 227-ValGluValGluGlnPheGluGluGluAspGlyLeuAsn-239
 247-ValAspLysGluSerGlnLys-253
 258-GlyLysGlyGlyGluArgLeuLysLysIleSerThrGluAlaArgLeuAspMetGluLysLeuPheAsp-280
 291-ValLysSerGlyTrpAlaAspAspIleArgPheLeuArg-303

Hydrophilic Regions - Hopp-Woods

7-LeuAlaGlyGluArgAlaAlaAspGlyTyrArg-17
 45-IleThrSerLysLysAlaGlnThrThrArgAsnArgVal-57
 61-TyrThrAspAspThrAla-66
 78-ThrAspHisArgAsnAlaLeuAsnAspArgLeuAsn-89
 110-ArgPheThrAspAlaAspArgValVal-118
 134-LysIleAspLysAspLysAlaLysAspArgTyrAla-145
 153-ValArgAlaGluPhe-157
 194-AspMetValThrAspLysSerAlaArg-202
 208-IleValArgGluLysLeuPhe-214
 217-LeuGlyGluGluLeuPro-222
 227-ValGluValGluGlnPheGluGluGluAspGlyLeuAsn-239
 247-ValAspLysGluSerGlnLys-253
 259-LysGlyGlyGluArgLeuLysLysIleSerThrGluAlaArgLeuAspMetGluLysLeuPheAsp-280
 293-SerGlyTrpAlaAspAspIleArgPheLeuArg-303
a674

AMPHI Regions - AMPHI

16-ValTyrGlnSerLeuIle-21
 24-ThrAlaAlaProGluIleAlaLysAsnIleArgGluMetProAspPheAlaLys-41
 58-AlaAlaGluTyrIleArgGlnIleArgPro-67
 86-ThrAlaCysHisGluLeuSerAlaMetProGluThr-97
 107-IleGluValThrLysThrPheGlyGlyThrAspGlyHisLysPheValAsnGlyIleLeuAspLysLeuAla-130

Antigenic Index - Jameson-Wolf

1-MetLysThrAlaArgArgArgArgGluLeuAla-12
 28-GluIleAlaLysAsnIleArgGluMetProAspPheAlaLysAlaAspGluGluLeuPhe-47
 54-ThrGlnThrAsnAla-58

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63-ArgGlnIleArgProLeuLeuAspArgAspGluLysAspLeuAsnProIleGluArg-81
 93-AlaMetProGluThrProTyr-99
 105-GluAlaIleGluValThrLysThrPheGlyGlyThrAspGlyHisLysPhe-121
 129-LeuAlaAlaGlnIleArgProAspGluProLysArgArg-141

Hydrophilic Regions - Hopp-Woods

1-MetLysThrAlaArgArgArgSerArgGluLeuAla-12
 28-GluIleAlaLysAsnIleArgGluMetProAspPheAlaLysAlaAspGluGluLeuPhe-47
 63-ArgGlnIleArgProLeuLeuAspArgAspGluLysAspLeuAsnProIleGluArg-81
 105-GluAlaIleGluVal-109
 133-IleArgProAspGluProLysArgArg-141

a675**AMPHI Regions - AMPHI**

21-ArgPheThrAsnGluIleGlySerGluMetLeuLysValCysCysArgThrLeuGlnGluLeuGly-42
 74-AlaLeuIleAlaIle-78
 123-GlnAlaIleGluArgIleGluGluLysAlaSerAsp-134
 141-GluCysAlaAsnLeuValAsnLeuLeuLeuGlu-151

Antigenic Index - Jameson-Wolf

6-ProAsnLeuAspGlyLysHisLeuArg-14
 26-IleGlySerGluMetLeu-31
 42-GlyValAlaAspGluAsnIle-48
 68-SerSerGluLysPheAsp-73
 82IleArgGlyGluThrTyr-87
 92-ValSerAsnGluSerGlyAlaGlyVal-100
 118-ThrGluAsnAspAlaGlnAlaIleGluArgIleGluGluLysAlaSerAspAlaAlaLysValAlaVal-14
 0
 152-GluGlnPheGluAspGluGlu-158

Hydrophilic Regions - Hopp-Woods

8-LeuAspGlyLysHisLeuArg-14
 26-IleGlySerGluMetLeu-31
 42-GlyValAlaAspGluAsnIle-48
 68-SerSerGluLysPheAsp-73
 82-IleArgGlyGluThrTyr-87
 92-ValSerAsnGluSerGlyAlaGly-99
 118-ThrGluAsnAspAlaGlnAlaIleGluArgIleGluGluLysAlaSerAspAlaAlaLysValAlaVal-14
 0
 152-GluGlnPheGluAspGluGlu-158

a677**AMPHI Regions - AMPHI**

20-AlaArgLeuCysArgPheArgArg-27
 45-LeuThrProPheArgArgValAsnHisPheValAlaPheThrArgPheAsnGln-62
 78-IleAspPheIleAspAlaAsp-84
 86-PheAspGlyLeuLeuAla-91
 105-HisLeuValGlyArgPhe-110
 154-CysArgProValAspAspLeuAspAsp-162
 165-AlaPhePheIleAsnGlnLeuIleLysLeuValPheGlnCys-178

Antigenic Index - Jameson-Wolf

23-CysArgPheArgArgHisSerArgSerValAsp-33
 35-AspValPheAspArgLysAspPheAsn-43
 59-ArgPheAsnGlnThrThrSerGlnArgArgAsnProArgAsnPheVal-74

-569-

81-IleAspAlaAspAspPheAspGly-88
 96-GlnGlnThrAspGlyArgAlaGluLysHisLeu-106
 114-GlyIleAsnAspAspGlyGlyPhe-121
 124-LeuGlyGlnGluThrAspAlaAlaVal-132
 155-ArgProValAspAspLeuAspAspPheGly-164
 180-ProSerGlyGlyArgAsn-185

Hydrophilic Regions - Hopp-Woods

23-CysArgPheArgArgHisSerArgSerValAsp-33
 35-AspValPheAspArgLysAspPhe-42
 64-ThrSerGlnArgArgAsnProArg-71
 81-IleAspAlaAspAspPheAsp-87
 96-GlnGlnThrAspGlyArgAlaGluLysHisLeu-106
 115-IleAsnAspAspGlyGly-120
 125-GlyGlnGluThrAspAlaAlaVal-132
 155-ArgProValAspAspLeuAspAsp-162
a678

AMPHI Regions - AMPHI

10-LeuValSerAlaIleIle-15
 24-MetArgGlyValIle-28
 47-PheAlaAlaProPhe-51
 79-LeuIleGlnLysIleLeuArgSerLeuLeuThrGlyAla-91
 102-ArgIleLeuGlyGlyValPheGlyAlaLeuLysGlyIleLeu-115
 130-ProAspThrGluGlu-134

Antigenic Index - Jameson-Wolf

125-SerLysThrAspLeuProAspThrGluGluTrpArgGlnSerTyrThr-140
 154-HisSerGlyGlyThrAlaGluThrProGluAspAsp-165

Hydrophilic Regions - Hopp-Woods

125-SerLysThrAspLeuProAspThrGluGluTrpArgGln-137
 157-GlyThrAlaGluThrProGluAspAsp-165
a681

AMPHI Regions - AMPHI

12-PheSerGluGluAlaLysPheIleSerAlaMet-22
 102-LeuProValGlyAsp-106
 122-ArgLeuGlyGluGlnCys-127
 137-IleGlyGluAlaAspAspAlaGluValValArgValValGlyValPheValGly-154
 202-LysCysValHisCysGly-207
 210-XxxGlyGlyLysLeuAlaAspPheThrThrIle-220
 234-CysAlaProPheAlaAlaLeuArgCysPheCysIlePheGlyValTrpLysArgIleArgAlaValPheCys
 GlyArg-259

Antigenic Index - Jameson-Wolf

11-AsnPheSerGluGluAlaLysPhe-18
 39-AlaThrProAsnSerTrpArgValArgGlnGln-49
 59-LeuValLysArgAlaCys-64
 67-ProMetArgArgCysLeuProSerArgLeu-76
 89-GlyGlyPheGlyMetProSerGluGlySerVal-99
 103-ProValGlyAspGlyLeuGlu-109
 120-AlaPheArgLeuGlyGluGlnCysGlyGlyPhe-130
 136-AspIleGlyGluAlaAspAspAlaGluVal-145
 157-AlaAlaGluGluThrPro-162

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167-PheLysAsnGlyGly-171
 173-AlaValGluGluAlaAspGly-179
 185-AspGlyValGlyGlyAspAlaAlaValGluCysArgGlyLysCysLeuCys-201
 207-GlyAsnThrXxxGlyGlyLysLeuAlaAsp-216
 224-SerAlaAspGlyGlyGly-229
 256-PheCysGlyArgArg-260

Hydrophilic Regions - Hopp-Woods

11-AsnPheSerGluGluAlaLysPhe-18
 44-TrpArgValArgGln-48
 59-LeuValLysArgAlaCys-64
 67-ProMetArgArgCysLeuPro-73
 95-SerGluGlySerVal-99
 120-AlaPheArgLeuGlyGluGln-126
 136-AspIleGlyGluAlaAspAlaGluVal-145
 157-AlaAlaGluGluThrPro-162
 173-AlaValGluGluAlaAspGly-179
 191-AlaAlaValGluCysArgGlyLysCysLeu-200
 210-XxxGlyGlyLysLeuAlaAsp-216
 256-PheCysGlyArgArg-260
a682

AMPHI Regions - AMPHI

33-ArgLeuArgLysCysGlyArgIleLeuSerGlyIleCysGluProPhe-48

Antigenic Index - Jameson-Wolf

9-SerTyrGlyLysTrpArgLysAsnTrpAspIle-19
 30-SerSerThrArgLeuArgLysCysGlyArg-39
 95-ArgPheProThrAspArgProIleLeu-103
 112-IleSerProArgThrGlyPheArgTyrProThrArgSerLeuProLysSerLysLysAlaTyrGly-133

Hydrophilic Regions - Hopp-Woods

12-LysTrpArgLysAsnTrpAsp-18
 32-ThrArgLeuArgLysCysGlyArg-39
 97-ProThrAspArgProIleLeu-103
 124-SerLeuProLysSerLysLysAlaTyrGly-133
a683

AMPHI Regions - AMPHI

26-ThrProAspLysSerAlaArgTrpGluAsnIleGlyThrIleSerAsn-41
 101-SerSerLeuGlnLeuPhe-106
 124-ArgProMetSerIleLeuSerGly-131

Antigenic Index - Jameson-Wolf

24-CysSerThrProAspLysSerAlaArgTrpGluAsn-35
 37-GlyThrIleSerAsnGly-42
 48-IleAsnLysAspSerValArgLysAsnGlyAsn-58
 63-XxxAspLysLysValValThrAsnLeuLysGlnGluArgPheAla-77
 93-CysAsnAsnLysThrTyrArgLeu-100
 106-PheAspThrLysAsnThrGluIleSerThr-115
 119-ThrAlaSerSerLeuArgPro-125
 131-GlyThrLeuThrGluLysGlnTyrGlu-139
 141-ValCysGlyLysLysLeu-146

Hydrophilic Regions - Hopp-Woods

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25-SerThrProAspLysSerAlaArgTrpGluAsn-35
 48-IleAsnLysAspSerValArgLysAsnGly-57
 63-XxxAspLysLysValValThr-69
 71-LeuLysGlnGluArgPheAla-77
 107-AspThrLysAsnThrGluIleSer-114
 133-LeuThrGluLysGlnTyrGlu-139
 141-ValCysGlyLysLysLeu-146
a684

AMPHI Regions - AMPHI

13-AlaAlaCysGlyThrValGln-19
 47-LeuAlaGluProLeu-51
 73-TrpAlaAspThrLeuAspAspMetLeuGluAlaAlaLeuSerAsnAlaPheAsnArgLeuAspSerThr-95
 110-TrpThrValTyrIleAspAlaPheGlnGlySerTyr-121
 154-AlaMetThrAlaAlaLeuGluGlnGlyLeuLysGlnAlaAlaGlnGlnMetVal-171

Antigenic Index - Jameson-Wolf

26-LeuProAspSerArgTyrIleArgProAlaThrGlnGlyGlyGluThrAlaValGluValArgLeuAlaGluP
 roLeuLysArgGlyGlyLeu-56
 60-ThrAspProTyrArgLeuAsnThrAlaGln-69
 76-ThrLeuAspAspMetLeuGlu-82
 90-AsnArgLeuAspSerThrArg-96
 101-AlaSerArgSerGlySerThrGluLys-109
 117-PheGlnGlySerTyrThrGlyLysThrLeu-126
 133-LeuProAspGlyThrAsnArgProPheHisIleGluThrGluGlnGlnGlyAspGlyTyrAla-153
 161-GlnGlyLeuLysGlnAlaAla-167

Hydrophilic Regions - Hopp-Woods

27-ProAspSerArgTyrIleArg-33
 35-AlaThrGlnGlyGlyGluThrAlaValGluValArgLeuAlaGluProLeuLysArgGlyGly-55
 76-ThrLeuAspAspMetLeuGlu-82
 90-AsnArgLeuAspSer-94
 102-SerArgSerGlySerThrGluLys-109
 141-PheHisIleGluThrGluGlnGlnGlyAsp-150
 161-GlnGlyLeuLysGlnAlaAla-167
a685

AMPHI Regions - AMPHI

7-AsnPheAlaPheCysGlyValVal-14
 44-CysAlaValLeuLeu-48
 94-TrpAlaAlaLeuAspThrLeuThrGluLeu-103
 137-TyrGluAlaLeuHisArgTyr-143
 154-GlyAlaGluAlaTyrGluGlnLeuAlaLysAsn-164
 182-GluLysGlnMetGluThrLeuAlaArgIlePheGlyLysGlu-195
 206-AspAlaLeuPheAla-210
 296-AlaValGluValLeuAspAsnAlaLeuVal-305
 336-AlaAlaGluGlnLeuLysGluAlaPhe-344

Antigenic Index - Jameson-Wolf

20-LeuAsnAsnLysHisSerTyrSerTyrAlaLysGluProHisThrValLysProArgPhe-39
 52-SerProGluProAlaAlaGluLysThrValSer-62
 74-ProThrAlaArgGlyAspAlaValValProLysAsnProGluArgValAla-90
 122-AlaPheAspLysAlaAla-127
 133-PheGluProAspTyrGluAlaLeuHisArgTyrAsn-144
 151-GlyGlyProGlyAlaGluAlaTyrGluGlnLeuAlaLysAsnAlaThr-166

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170-LeuThrValAspAsnGlyAsnIleArgThrSerGlyGluLysGlnMetGluThrLeu-188
 192-PheGlyLysGluAlaArgAlaAlaGluLeuLysAlaGlnIle-205
 211-GlnThrArgGluAlaAlaLysGlyLysGlyArgGlyLeu-223
 227-ValThrGlyAsnLysValSerAlaPheGlyThrGlnSerArgLeu-241
 247-GlyAspIleGlyLeuProProValAspGluSerLeuArgAsnGluGlyHisGlyGln-265
 271-TyrIleLysGluLysAsnProAspTrpIle-280
 285-ArgThrAlaAlaIleGlyGlnGluGlyProAla-295
 307-GlyThrAsnAlaTrpLysArgLysGln-315
 328-GlyGlySerArgGlnLeu-333
 338-GluGlnLeuLysGluAlaPheGluLysAlaGluPro-349
 351-AlaAlaGlyLysGlu-355

Hydrophilic Regions - Hopp-Woods

28-TyrAlaLysGluProHisThrValLys-36
 52-SerProGluProAlaAlaGluLysThrValSer-62
 75-ThrAlaArgGlyAspAlaValVal-82
 84-LysAsnProGluArgValAla-90
 122-AlaPheAspLysAlaAla-127
 135-ProAspTyrGluAla-139
 156-GluAlaTyrGluGlnLeuAlaLys-163
 175-GlyAsnIleArgThrSerGlyGluLysGlnMetGluThrLeu-188
 192-PheGlyLysGluAlaArgAlaAlaGluLeuLysAlaGlnIle-205
 211-GlnThrArgGluAlaAlaLysGlyLysGlyArgGly-222
 253-ProValAspGluSerLeuArgAsnGluGlyHisGly-264
 271-TyrIleLysGluLysAsnPro-277
 290-GlyGlnGluGlyProAla-295
 309-AsnAlaTrpLysArgLysGln-315
 338-GluGlnLeuLysGluAlaPheGluLysAlaGluPro-349
 351-AlaAlaGlyLysGlu-355

a686**AMPHI Regions - AMPHI**

10-AspValPheAspAspIleCysSerAlaValGluSerPheGlyGlyIleAlaArgSerValGlnLeu-31
 50-ThrThrGlyIleValGluThrValAspLysProLeu-61
 70-ValGluAlaAspIle-74
 86-IleProArgAlaPheGlySerGlyIleAlaAlaAlaLeu-98

Antigenic Index - Jameson-Wolf

1-TerTerAsnPheSerCysArgAlaAspAspValPheAsp-13
 46-LeuArgGlnHisThrThrGlyIle-53
 55-GluThrValAspLysProLeuSerGlyAla-64
 70-ValGluAlaAspIle-74
 115-AspAlaValLysAlaGluSerValAsnGlyThrThrGly-127

Hydrophilic Regions - Hopp-Woods

6-CysArgAlaAspAspValPheAsp-13
 55-GluThrValAspLysProLeuSer-62
 70-ValGluAlaAspIle-74
 115-AspAlaValLysAlaGluSerValAsn-123

a687**AMPHI Regions - AMPHI**

11-AlaAlaLeuPheAlaLeu-16
 64-LysValGluValLeuGluPhePheGlyTyrPheCysPro-76
 78-CysAlaHisLeuGluProValLeuSerLysHisAlaLysSerPhe-92

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112-LeuAlaArgLeuAlaAlaAla-118
 135-PheAspAlaMetVal-139
 148-ProGluValLeuLysLysTrpLeu-155
 176-GlnAlaArgAlaAspLysMetGlnGluLeuThrGluThrPhe-189

Antigenic Index - Jameson-Wolf

1-MetLysSerLysHis-5
 19-CysAspSerLysValGlnThrSerValProAlaAspSerAlaPro-33
 43-GlyLeuValGluGlyGlnAsnTyr-50
 56-ProIleProGlnGlnGlnAlaGlyLysValGluVal-67
 87-LysHisAlaLysSerPheLysAspAspMetTyrLeu-98
 122-AlaAlaAlaAspSerLysAspValAlaAsn-131
 141-GlnLysIleLysLeuGlnGluProGluValLeuLys-152
 159-ThrAlaPheAspGlyLysLysVal-166
 171-GluSerProGluSerGlnAlaArgAlaAspLysMetGlnGluLeuThrGlu-187
 189-PheGlnIleAspGlyThrPro-195
 199-ValGlyGlyLysTyrLysValGluPheAlaAsp-209
 211-GluSerGlyMetAsnThr-216
 220-LeuAlaAspLysValArgGluGluGlnLysAlaAlaHis-232

Hydrophilic Regions - Hopp-Woods

1-MetLysSerLysHis-5
 19-CysAspSerLysValGlnThr-25
 27-ValProAlaAspSerAlaPro-33
 61-GlnAlaGlyLysValGluVal-67
 87-LysHisAlaLysSerPheLysAspAspMetTyrLeu-98
 122-AlaAlaAlaAspSerLysAspValAla-130
 141-GlnLysIleLysLeuGlnGluProGluValLeuLys-152
 159-ThrAlaPheAspGlyLysLysVal-166
 171-GluSerProGluSerGlnAlaArgAlaAspLysMetGlnGluLeuThrGlu-187
 201-GlyLysTyrLysValGluPheAlaAsp-209
 220-LeuAlaAspLysValArgGluGluGlnLysAlaAlaHis-232
a688

AMPHI Regions - AMPHI

23-LeuSerAlaLeuLeuGlyLeu-29
 120-GlyAsnAlaLeuGlnAsnAlaAla-127

Antigenic Index - Jameson-Wolf

4-TyrProSerArgPheAlaGln-10
 13-IleSerValAsnLys-17
 47-IleIleGlnGlyAsnGluLeuGluProArgAla-57
 61-LeuArgProGlyMetThrLysAspGln-69
 82-AlaPheHisThrAspArgTrpAspTyr-90
 93-AsnThrSerArgAsnGlyIleIleLysAspArgSerAsn-105
 116-ValArgThrGluGlyAsnAla-122
 125-AsnAlaAlaGluAlaLeuArgValLysGlnAsnAlaAspLysGln-139

Hydrophilic Regions - Hopp-Woods

51-AsnGluLeuGluProArgAla-57
 64-GlyMetThrLysAspGln-69
 98-GlyIleIleLysAspArgSerAsn-105
 116-ValArgThrGluGlyAsnAla-122
 125-AsnAlaAlaGluAlaLeuArgValLysGlnAsnAlaAspLysGln-139
a689

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AMPHI Regions - AMPHI

55-TyrProGluMetSerGluLysLeuMet-63
 65-ValLeuMetAlaMetLeuValThrLeu-73
 82-LeuProAlaIleProGluMetAlaGln-90
 111-AlaPheGlyGlnValValGlyGly-118
 123-IleLysGlyArgLys-127
 154-LeuAsnLeuArgValValGlnAlaPheGlyAlaGly-165
 188-PheAlaLeuIleGlyIleIleLeu-195
 203-ProMetValGlyAlaLeuLeuGlnGlyLeuGlyGlyTrpGlnAlaIlePheVal-220
 230-LeuGlyLeuValGlnTyrPhe-236
 245-LysIleGlyArgAspVal-250
 257-ArgPheLysArgValLeu-262
 277-SerPheGlySerMetPheAla-283
 314-MetMetPhePheAsnArgIleThr-321
 344-AlaAlaAsnLeuSerGlnLeuAlaAlaValLeuPhe-355
 400-ValLeuGlyValPheGlnSerLeuIleGly-409

Antigenic Index - Jameson-Wolf

36-PheArgArgArgAlaVal-41
 45-IleGlyArgGluPheMetProSer-52
 57-GluMetSerGluLysLeu-62
 95-AspValHisArgIleGluGln-101
 119-SerValSerAspIleLysGlyArgLysProVal-129
 174-MetValArgAspTyrTyrSerGlyArgLysAlaAla-185
 238-ProLysProAlaValGlyGlyLysIleGlyArgAspValPhe-251
 257-ArgPheLysArgValLeuLysThrArgAla-266
 325-LeuLysThrGlyValHis-330
 390-PheLysGluGluGlyGlySer-396
 448-ArgAlaTrpLysGluAsnGlyGlnSerGluTyrLeu-459

Hydrophilic Regions - Hopp-Woods

36-PheArgArgArgAlaVal-41
 45-IleGlyArgGluPheMet-50
 57-GluMetSerGluLysLeu-62
 95-AspValHisArgIleGluGln-101
 119-SerValSerAspIleLysGlyArgLysProVal-129
 178-TyrTyrSerGlyArgLysAlaAla-185
 245-LysIleGlyArgAspVal-250
 257-ArgPheLysArgValLeuLysThrArgAla-266
 390-PheLysGluGluGlyGlySer-396
 448-ArgAlaTrpLysGluAsnGlyGln-455

a690**AMPHI Regions - AMPHI**

36-AlaSerSerThrAlaSerAla-42
 57-SerAlaProAspAsnValLysGlnAlaGlu-66
 68-ValProProSerAsnCysThrAspLeuHisProAlaThrGlyIleAspAspLeuMetGlnGlnIleAlaGluHisIle-93
 116-GlyTyrAspAsnIleGlnArgLeu-123
 151-ArgThrIleSerArgGlnAlaGlnAspAla-160
 189-ProLysArgThrArgTyrPhe-195
 213-GlyAsnPheGlnTyrIleGlyGlnLeuProGlyTyrLeuLys-226

Antigenic Index - Jameson-Wolf

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1-MetLysAsnLysThrSer-6
 21-SerProSerLysGluAspLysThrLysGluAsnGlyAla-33
 43-AlaSerSerSerAlaProGlnThrAspLeu-52
 57-SerAlaProAspAsnValLysGlnAlaGluSerValProProSerAsnCysThrAspLeuHisProAlaThrGlyIleAspAspLeuMet-86
 91-GluHisIleAspSerAspCys-97
 104-HisGluLeuGluThrArgPhe-110
 112-LeuProGlyGlyGlyTyrAspAsnIleGln-121
 126-ProAspIleArgProGluAspProAspTyrHisGln-137
 144-GluAspLeuArgTyrGlyLysArgThrIleSerArgGlnAlaGln-158
 160-AlaLeuMetGluGlnGluArgArgLeuArgGlu-170
 177-GlnGlySerGlnGluThrArgGlyGlnGlyGluGluProLysArgThrArgTyr-194
 198-SerAlaThrProAlaTyrSerSerArgHisAsnAsnGlyLeuGlyGlyAsn-214
 228-HisGlyGluMetLeuGluAsnGlnSerLeu-237
 239-ArgLeuSerAsnArgGluArgAsnProAspLysProPheLeu-252
 255-HisPheAspGluAsnGlyLysIleThr-263
 267-ValTyrGluLysAsnIleTyrPheAsnProAsnLeuGlyArgArg-281

Hydrophilic Regions - Hopp-Woods

1-MetLysAsnLysThr-5
 21-SerProSerLysGluAspLysThrLysGluAsnGlyAla-33
 46-SerAlaProGlnThrAspLeu-52
 57-SerAlaProAspAsnValLysGlnAlaGluSerValPro-69
 81-GlyIleAspAspLeuMet-86
 91-GluHisIleAspSer-95
 104-HisGluLeuGluThr-108
 128-IleArgProGluAspProAspTyrHis-136
 144-GluAspLeuArgTyrGlyLysArgThrIleSerArgGlnAlaGln-158
 160-AlaLeuMetGluGlnGluArgArgLeuArgGlu-170
 178-GlySerGlnGluThrArgGlyGlnGlyGluGluProLysArgThrArgTyr-194
 203-TyrSerSerArgHisAsnAsn-209
 228-HisGlyGluMetLeuGlu-233
 240-LeuSerAsnArgGluArgAsnProAspLysProPhe-251
 255-HisPheAspGluAsnGlyLysIleThr-263
a691

AMPHI Regions - AMPHI

11-LysProAlaAlaSer-15
 55-HisAsnGluLeuArgLysIleArgAla-63
 108-ArgTyrLeuSerGly-112

Antigenic Index - Jameson-Wolf

7-CysArgPheAlaLys-11
 36-LeuAsnAspPheGlnProAsnCysAspIleArgArgLeuGlyLeuThrGlnGlyGlnHisAsnGluLeuArgLysIleArgAla-63
 67-MetAlaGlyAspArgAlaArgLeuLysValMetHis-78
 80-GluHisSerArgArgArgSerVal-87
 91-IleSerSerAspValPheAsnArgAsnGluAlaArgAspTyrValGluSerArgTyrLeuSerGlyMetAspPheAlaValAspGluLeuGluIle-122
 131-ThrProGlnGlnGlnGln-136
 140-SerSerCysLeuLys-144

Hydrophilic Regions - Hopp-Woods

43-CysAspIleArgArgLeuGly-49
 54-GlnHisAsnGluLeuArgLysIleArgAla-63

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67-MetAlaGlyAspArgAlaArgLeuLysValMetHis-78
 80-GluHisSerArgArgArgSerVal-87
 95-ValPheAsnArgAsnGluAlaArgAspTyrValGlu-106
 115-PheAlaValAspGluLeuGluIle-122

a692**AMPHI Regions - AMPHI**

6-CysArgCysSerGluSerIleArgArgIleArgArgAsn-18
 77-LeuGlyTyrValPheLysProLeuAlaValPheVal-88
 106-GlnGlyPheGlyGlnLeuHis-112
 132-ThrArgGlnLeuArgGlyPheLys-139
 143-PheAspValPheGlnValPheGlyAsn-151
 170-GlnPheValGluHisHis-175
 177-AspAlaGlyGluValGlyArgValValGlyArgGlyTyrGlyAlaAlaValPheAspPhePheGlnArgPhe
 GlnLeu-202
 205-ValGlnSerGlnArgArgGlyArgHisLeuGluAspPheGlyAsp-219
 254-ValGlyLysLeuAspGlnPheAspGlyVal-263
 275-PheAspHisIleAlaGluValAlaAsp-283

Antigenic Index - Jameson-Wolf

6-CysArgCysSerGluSerIleArgArgIleArgArgAsnGlyArgGluTrpArgIleLysGlyGlnLysCysArg
 LeuAsnThrAspThrValGln-37
 89-GlyGlyPheAspGlyArgProValAspIleGlyLysAlaArgPheLeu-104
 120-AlaValAspAspGlyLysIle-126
 131-AlaThrArgGlnLeuArgGlyPheLysLeuAspAspPheAspVal-145
 153-ArgPheGlyCysGlyGlnArgIleAspAla-162
 174-HisHisGlnAspAlaGlyGluValGlyArgValValGlyArgGlyTyr-189
 204-ArgValGlnSerGlnArgArgGlyArgHisLeuGluAspPheGlyAsp-219
 236-GluAspValAspVal-240
 255-GlyLysLeuAspGlnPheAspGly-262
 279-AlaGluValAlaAspGlyArgAlaGluAspAspPhePhePhe-292
 295-AlaValValGlyGlyGlyArgSerGlyCysGlyGlyArg-307
 313-AlaAlaGlyGlyGluAspGluArgGluCysGlyGlyGlyLysGlyPheGluGlu-330

Hydrophilic Regions - Hopp-Woods

7-ArgCysSerGluSerIleArgArgIleArgArgAsnGlyArgGluTrpArgIleLysGlyGlnLysCysArgLeu
 AsnThr-33
 91-PheAspGlyArgProValAspIleGlyLys-100
 120-AlaValAspAspGlyLysIle-126
 131-AlaThrArgGlnLeuArgGlyPheLysLeuAspAspPheAsp-144
 174-HisHisGlnAspAlaGlyGluValGlyArgValValGly-186
 206-GlnSerGlnArgArgGlyArgHisLeuGluAspPheGlyAsp-219
 236-GluAspValAspVal-240
 255-GlyLysLeuAspGlnPheAsp-261
 279-AlaGluValAlaAspGlyArgAlaGluAspAspPhePhePhe-292
 299-GlyGlyArgSerGlyCysGly-305
 315-GlyGlyGluAspGluArgGluCysGlyGly-324
 326-LysGlyPheGluGlu-330

a694**AMPHI Regions - AMPHI**

82-ArgGlyArgAlaCysArg-87
 116-CysArgHisPheAlaGln-121
 123-ValAlaValGlyArgIleGly-129
 140-PheCysGlnLeuPheAsp-145

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156-AspIlePheLeuVal-160
 162-IleAlaAspIleGlyGlu-167
 184-ArgGlyLeuAlaAspIleGlyGluPheValGlyValSerAsp-197
 251-HisGlnArgAlaSerArgIleLys-258
 283-ArgAlaArgArgHisPheArgGlnValPheAsn-293
 311-AspPheValAlaHisIle-316
 340-AlaAlaArgIleGly-344

Antigenic Index - Jameson-Wolf

3-SerAlaSerGlyThrArgGlnLysCysArgLeuLysProVal-16
 23-ProLysHisSerThrProAlaSer-30
 47-GlyGlnAspGluHisAsnAla-53
 66-ProProSerAlaTyrGly-71
 79-HisPheGlyArgGlyArgAlaCysArgTyr-88
 110-ArgIleAspSerAlaArgCysArgHis-118
 127-ArgIleGlyArgThrAspHisAsnHisAsp-136
 144-PheAspGlyGlyLeuProValGlyArgArgIleAla-155
 163-AlaAspIleGlyGluThrArgValGlnArgGlyAspAspValPhe-177
 180-IleAspArgGluArgGlyLeuAlaAsp-188
 202-HisIleSerAspArgPheAspGlnLysHisPheAlaArgArgLysLeuProHisArgSerPheAspLeu-224
 228-LeuMetProAspHisAspAspPheThr-236
 250-ArgHisGlnArgAlaSerArgIleLysHisAlaGluThrAlaLeu-264
 268-LeuProHisArgLeuArgTyrAla-275
 280-AsnGlnCysArgAlaArgArgHisPhe-288
 291-ValPheAsnLysHisArgThr-297
 316-IleAsnArgArgAlaGluLeu-322
 326-ThrPheAspAsnThrAspCysPro-333
 336-ThrSerAlaGluAlaAlaArgIleGlyLysAspAspGlyPhe-349
 370-TyrGlyGlyArgCysCysProThrProProThrProHisArgArgArg-385

Hydrophilic Regions - Hopp-Woods

5-SerGlyThrArgGlnLysCysArgLeuLysPro-15
 47-GlyGlnAspGluHisAsnAla-53
 81-GlyArgGlyArgAlaCysArg-87
 110-ArgIleAspSerAlaArgCysArgHis-118
 127-ArgIleGlyArgThrAspHisAsnHis-135
 150-ValGlyArgArgIleAla-155
 163-AlaAspIleGlyGluThrArgValGlnArgGlyAspAsp-175
 180-IleAspArgGluArgGlyLeuAlaAsp-188
 202-HisIleSerAspArgPheAspGlnLysHisPheAlaArgArgLysLeuProHisArgSerPheAspLeu-224
 230-ProAspHisAspAsp-234
 250-ArgHisGlnArgAlaSerArgIleLysHisAlaGluThrAlaLeu-264
 280-AsnGlnCysArgAlaArgArgHisPhe-288
 292-PheAsnLysHisArg-296
 316-IleAsnArgArgAlaGluLeu-322
 327-PheAspAsnThrAsp-331
 338-AlaGluAlaAlaArgIleGlyLysAspAspGly-348
 380-ThrProHisArgArgArg-385

a695**AMPHI Regions** - AMPHI

36-HisProGlnArgPheSerLysProAlaGluArgTyrAlaAspCysProHis-52
 85-CysSerSerProValSerArgAsn-92

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119-AspArgLeuAspTyr-123
 129-ValArgLeuSerAsnGluValGlu-136
 144-AlaLeuGluHisAla-148
 158-ValGlnLysLeuAsp-162
 183-ValGluThrAlaGlnAsnLeuTyrAsnGlnAlaLeuLysHisTyrLysSerGly-200
 205-AlaAlaSerLeuLeuLysGlyAla-212
 238-CysGluSerValIleGluIle-244
 248-TyrAlaAsnArgPheLysAspSer-255
 278-AlaArgAlaThrTrpArgSerLeuIleGlnThrTyrProGly-291

Antigenic Index - Jameson-Wolf

5-CysProAlaArgArgHisHisCysHis-13
 17-PheValGluArgLysGlyAspAlaArgSerGlyPhe-28
 31-AlaAlaGlnArgArgHisProGlnArgPheSerLysProAlaGluArgTyrAlaAspCysProHisHisProAlaArgArgArgPheAspProAlaSerGluLysIleMetLysThrLys-71
 87-SerProValSerArgAsnIleGlnAspMetArgLeuGluProGlnAlaGluAlaGlySerSerAspAlaIleProTyr-112
 117-LeuGlnAspArgLeuAspTyr-123
 131-LeuSerAsnGluValGluThrLeuAsnGlyLysValLysAlaLeuGluHisAlaLysThrHisProSerSerArgAlaTyrValGlnLysLeuAspAspArgLysLeuLysGlu-168
 170-TyrLeuAsnThrGluGlyGlySerAla-178
 193-AlaLeuLysHisTyrLysSerGlyArgPhe-202
 210-LysGlyAlaAspGlyGlyAspGlyGlySerIleAlaGln-222
 230-GlnSerArgAlaArgMetGlyAsnCys-238
 244-IleGlyGlyArgTyrAlaAsnArgPheLysAspSerProThrAlaPro-259
 266-GlyGluCysGlnTyr-270
 272-LeuGlnGlnLysAspIleAla-278
 289-TyrProGlySerProAlaAlaLysArgAlaAlaAlaAlaValArgLysArg-305

Hydrophilic Regions - Hopp-Woods

5-CysProAlaArgArgHisHisCys-12
 17-PheValGluArgLysGlyAspAlaArgSerGlyPhe-28
 31-AlaAlaGlnArgArgHisProGlnArgPheSerLysProAlaGluArgTyrAlaAsp-49
 51-ProHisHisProAlaArgArgArgPheAspProAlaSerGluLysIleMetLysThrLys-71
 88-ProValSerArgAsnIleGlnAspMetArgLeuGluProGlnAlaGluAlaGlySerSerAsp-108
 117-LeuGlnAspArgLeuAspTyr-123
 131-LeuSerAsnGluValGluThrLeuAsnGlyLysValLysAlaLeuGluHisAlaLysThrHisProSerSer-154
 157-TyrValGlnLysLeuAspAspArgLysLeuLysGlu-168
 195-LysHisTyrLysSerGlyArgPhe-202
 210-LysGlyAlaAspGlyGlyAspGlyGlySerIleAlaGln-222
 231-SerArgAlaArgMetGlyAsn-237
 248-TyrAlaAsnArgPheLysAspSerProThrAlaPro-259
 266-GlyGluCysGlnTyr-270
 272-LeuGlnGlnLysAspIleAla-278
 293-ProAlaAlaLysArgAlaAlaAlaAlaValArgLysArg-305
a696

AMPHI Regions - AMPHI

18-PheGlyGlyIlePheHisPheValCysArgPheLeuSerArgValGlySerPheValGlnSerIlePheSerCysPheSer-44
 65-IlePheAspLeuValPhe-70
 94-GlyLeuAsnArgPheLeuAsnLeuLeuPheGlyPheLeuArg-107

Antigenic Index - Jameson-Wolf

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12-CysGlnGlyAsnLysLeu-17
73-PheAspGlyArgSerGlyArgLeuGlyGlyArgSerArgSer-86
108-ThrSerCysGlnGlySerArgHisHisCysGlyAsnGln-120

Hydrophilic Regions - Hopp-Woods

73-PheAspGlyArgSerGlyArgLeuGlyGlyArgSerArgSer-86
109-SerCysGlnGlySerArgHisHisCys-117
a700

AMPHI Regions - AMPHI

6-ThrLeuLeuSerValLeuIleProMetPheAlaGlyPhePheIleArgValProLys-24
27-LeuProAlaLeuAspLysValLeuSerValLeu-37
51-ArgValGluAspLeuGlySerArg-58
80-AlaLeuAlaValLeuGlyLysLeu-87
191-SerTrpValLysGlyLeu-196
204-TrpTyrSerLeuSerGlyLeuVal-211
216-TyrGlyAlaValTrpGlySerIleAlaLeuLeuAsnAspLeuAlaArgGluLeu-233
267-ArgGlyAlaGlyGlyLeu-272

Antigenic Index - Jameson-Wolf

21-ArgValProLysProTyrLeu-27
50-SerArgValGluAspLeuGlySerArgLeuAspAspMetAla-63
90-TrpArgIleLysGlyLysGlyLysGlyVal-99
118-AlaSerGlyLysLeuMetArg-124
128-MetProSerGluAsnAlaGlyMet-135
149-LeuLysSerSerGlyValSerLeu-156
160-LeuValAsnArgArgGlyIleArgLeu-168
245-ArgPheProAspAla-249
268-GlyAlaGlyGlyLeuGluAla-274

Hydrophilic Regions - Hopp-Woods

50-SerArgValGluAspLeuGlySerArgLeuAspAspMetAla-63
92-IleLysGlyLysGlyLysGlyVal-99
149-LeuLysSerSerGlyValSer-155
160-LeuValAsnArgArgGlyIleArg-167
a701

AMPHI Regions - AMPHI

6-PheGlnValAlaGly-10
45-ProAsnSerPheAlaSerPheLysArgPheSerSerIle-57

Antigenic Index - Jameson-Wolf

18-GlnSerThrProSerSerProThr-25
33-ThrSerProGluAlaGly-38
52LysArgPheSerSerIleSer-58
72-GlyLysAlaAspIleProThr-78
105-LysAlaSerLeuAsnAsnArgAlaThrSerSer-115
119-SerGlySerGlyThrArgLeu-125

Hydrophilic Regions - Hopp-Woods

72-GlyLysAlaAspIle-76
107-SerLeuAsnAsnArgAlaThrSer-114
a702

AMPHI Regions - AMPHI

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51-CysSerGlyLeuValThrVal-57
 118-LysIleSerArgGly-122

Antigenic Index - Jameson-Wolf

1-MetProCysSerLysAlaSer-7
 28-LeuAlaArgAspSerCysSerProGlyLeu-37
 41-ThrAlaProAlaSerSer-46
 68-LeuAlaIleArgArgMetAlaSerArgProThrGlyValArgArgValIleSer-85
 88-GlyMetProProSerThrArgAlaTrpAspLysSerMetAla-101
 118-LysIleSerArgGlyValSer-124
 139-ArgTrpAspArgLeu-143

Hydrophilic Regions - Hopp-Woods

29-AlaArgAspSerCysSer-34
 69-AlaIleArgArgMetAlaSerArgProThrGlyValArgArgValIleSer-85
 94-ArgAlaTrpAspLys-98
 139-ArgTrpAspArgLeu-143

a703**AMPHI Regions** - AMPHI

21-GlnThrLeuAlaThrValAsnGly-28
 64-GluValValAsnThrValValAlaGlnGlu-73
 79-LeuAspArgSerAlaGlu-84
 140-AlaAlaTyrAspAsnIleSerGlyPheTyrLysGly-151
 181-PheAspAlaValLeu-185
 204-ValProLeuLysAspLeuGluGlnGlyValProProLeuTyrGlnAlaIleLysAspLeuLysLys-225
 252-ValProSerPheAsp-256
 270-ArgIleAspArgAlaValGlyAlaLeu-278

Antigenic Index - Jameson-Wolf

1-MetLysAlaLysIle-5
 26-ValAsnGlyGlnLysIleAspSerSerVal-35
 43-PheArgAlaGluAsnSerArgAlaGluAspThrProGlnLeuArg-57
 72-GlnGluValLysArgLeuLysLeuAspArgSerAlaGluPheLysAsnAlaLeuAlaLysLeuArgAlaGluAlaLysLysSerGlyAspAspLysLysProSerPheLysThr-109
 129-LysThrGlnProValSerGluGlnGluValLysAlaAlaTyr-142
 144-AsnIleSerGlyPheTyrLysGlyThrGlnGluValGlnLeu-157
 160-IleLeuThrAspLysGluGluAsnAlaLysLysAlaValAlaAspLeuLysAlaLysLysGlyPhe-181
 188-TyrSerLeuAsnAspArgThrLysGlnThrGlyAlaProValGly-202
 207-LysAspLeuGluGlnGlyValProPro-215
 221-LysAspLeuLysLysGlyGluPheThrAlaThrProLeuLysAsnGlyAspPhe-238
 243-TyrValAsnAspSerArgGluValLysValProSerPheAspGluMetLysGly-260
 266-LeuGlnAlaGluArgIleAspArgAlaVal-275
 282-AlaAsnIleLysProAlaLys-288

Hydrophilic Regions - Hopp-Woods

1-MetLysAlaLysIle-5
 29-GlnLysIleAspSerSerVal-35
 43-PheArgAlaGluAsnSerArgAlaGluAspThrProGlnLeuArg-57
 72-GlnGluValLysArgLeuLysLeuAspArgSerAlaGluPheLysAsnAlaLeuAlaLysLeuArgAlaGluAlaLysLysSerGlyAspAspLysLysProSerPhe-107
 131-GlnProValSerGluGlnGluValLysAlaAlaTyr-142
 160-IleLeuThrAspLysGluGluAsnAlaLysLysAlaValAlaAspLeuLysAlaLysLysGlyPhe-181
 189-SerLeuAsnAspArgThrLysGlnThrGly-198
 207-LysAspLeuGluGln-211

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221-LysAspLeuLysLysGlyGluPhe-228
245-AsnAspSerArgGluValLysValProSerPheAspGluMetLysGly-260
266-LeuGlnAlaGluArgIleAspArgAlaVal-275
282-AlaAsnIleLysProAlaLys-288

a704**AMPHI Regions - AMPHI**

33-GlyCysGlnAlaValAlaGlnSerIleIleAspAlaGlyLeuGly-47
65-GlnGluIleLeuAspGlnIleArgLeuTyrAspLeuProGluValGlnSerAspPheValGluThrHis-87
184-LeuGlyMetMetGln-188
208-LeuGlnIleLeuHisTrpGlyGlyPheLeuMetValLeuPro-221
232-GlnGlyAlaLeuArgAspLeuLys-239
252-AlaIleIleMetThrPheIleAlaGlyValTyrSer-263
289-PheMetGluHisIleAlaArg-295
298-AlaGlyAspAlaAlaGluArgLeuValLysLeuIleProAlaPheCysHisHisMetProAspTyrProAsp
ThrGlnGluThr-325
400-GlyGlyThrArgLeuSerHisIleValArgLeuLeuAspArgAlaLeuAla-416
423-GluLeuAlaGluGlnTyr-428
499-AlaIleGluThrLeuAlaGln-505
527-IleSerLeuLeuArg-531
576-LeuAsnArgIleGlyGluGlyValGly-584
639-LeuLysAspSerAlaAlaGluAlaValArgGlnLeuAla-651
670-GluThrAlaArgAlaLeuGlyVal-677
691-GluTyrValLysAlaLeuGlnLysGlu-699
744-AspLeuArgThrValAlaHisLeuLeuAsp-753
780-AlaValLeuGlyTyrValGlnProTrpIleAlaAla-791
799-LeuAlaValLeuGly-803
805-AlaLeuArgLeuHisLysArg-811

Antigenic Index - Jameson-Wolf

1-MetLysLysThrCys-5
9-GlyLeuAspValProGluAsn-15
21-ArgTyrGluAsnGluAspArgGluThrCysCys-31
46-LeuGlySerTyrTyrLysGlnArgThrAlaAspAlaGlnLysThrGluLeuProProGlnGluIleLeuAsp-
69
77-ProGluValGlnSerAspPheValGluThrHisGlyGlyThrArgGluAla-93
112-GlnLeuLeuArgThrAspGlyIleVal-120
124-LeuAsnTyrSerThrHisArgCys-131
133-ValValTrpAspAspGlyLysIleArgLeu-142
158-ProTyrAspAlaGlnLysIleGluAlaAlaAsnGlnLysGluArgLysGlnTyr-175
199-TyrGlyGlyAspIleGluProAspPhe-207
234-AlaLeuArgAspLeuLysAsnArgArgValGlyMetAspThrProIle-249
293-IleAlaArgArgLysAlaGlyAspAlaAlaGluArgLeuVal-306
316-MetProAspTyrProAspThrGlnGluThrCysGlu-327
329-AlaValValLysLeuLysAlaGlyAsp-337
342-LysProGlyGluThrIleProValAspGlyThrVal-353
356-GlySerSerAlaValAsnGluSer-363
365-LeuThrGlyGluSer-369
374-LysMetProSerGluLysValThrAla-382
393-IleArgThrAspArgThrGlyGlyGlyThrArg-403
414-AlaLeuAlaGlnLysProArgThrAlaGluLeuAlaGlu-426
486-ThrLeuAlaArgGluGlyIle-492
495-GlyGlyLysGlnAlaIle-500
510-IlePheAspLysThrGlyThrLeuThrGlnGlyLysProAlaValArgArg-526
528-SerLeuLeuArgGlyThrAspGluAlaPhe-537

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545-LeuGluGlnGlnSerGluHisProLeu-553
560-CysArgIleSerAspGlySerValPro-568
570-IleAlaIleLysGlnArgLeuAsnArgIleGlyGluGlyVal-583
589-ValAsnGlyGluThrGln-594
605-AlaGluIleSerGlyLysGluProGlnThrGluGlyGlyGlySer-619
635-LeuGlnAspProLeuLysAspSerAlaAlaGluAlaValArg-648
650-LeuAlaGlyLysAsnLeu-655
659-IleLeuSerGlyAspArgGluThrAlaVal-668
684-AlaMetProGluAspLysLeuGluTyr-692
694-LysAlaLeuGlnLysGluGlyLysLys-702
707-GlyAspGlyIleAsnAspAla-713
725-AlaAlaGlyGlyThrAspIleAlaArgAspGlyAlaAsp-737
743-GluAspLeuArgThr-747
753-AspGlnAlaArgArgThrArgHisIleIle-762
807-ArgLeuHisLysArgGlyLysMetGlnSerGluLysMetProSerGluGln-823

Hydrophilic Regions - Hopp-Woods

1-MetLysLysThrCys-5
21-ArgTyrGluAsnGluAspArgGluThrCys-30
50-TyrLysGlnArgThrAlaAspAlaGlnLysThrGluLeuProPro-64
77-ProGluValGlnSerAspPheValGlu-85
87-HisGlyGlyThrArgGluAla-93
112-GlnLeuLeuArgThrAspGlyIleVal-120
133-ValValTrpAspAspGlyLysIleArgLeu-142
160-AspAlaGlnLysIleGluAlaAlaAsnGlnLysGluArgLysGlnTyr-175
201-GlyAspIleGluProAspPhe-207
234-AlaLeuArgAspLeuLysAsnArgArgValGlyMet-245
293-IleAlaArgArgLysAlaGlyAspAlaAlaGluArgLeuVal-306
318-AspTyrProAspThrGlnGluThrCysGlu-327
329-AlaValValLysLeuLysAlaGlyAsp-337
375-MetProSerGluLysValThr-381
393-IleArgThrAspArgThrGlyGlyGlyThrArg-403
414-AlaLeuAlaGlnLysProArgThrAlaGluLeuAlaGlu-426
486-ThrLeuAlaArgGluGlyIle-492
518-ThrGlnGlyLysProAlaValArgArg-526
531-ArgGlyThrAspGlu-535
545-LeuGluGlnGlnSerGluHisProLeu-553
561-ArgIleSerAspGlySerVal-567
570-IleAlaIleLysGlnArgLeuAsnArgIleGlyGlu-581
607-IleSerGlyLysGluProGlnThrGluGlyGlyGly-618
637-AspProLeuLysAspSerAlaAlaGluAlaValArg-648
661-SerGlyAspArgGluThrAlaVal-668
684-AlaMetProGluAspLysLeuGluTyr-692
694-LysAlaLeuGlnLysGluGlyLysLys-702
730-AspIleAlaArgAspGlyAlaAsp-737
743-GluAspLeuArgThr-747
753-AspGlnAlaArgArgThrArgHisIleIle-762
807-ArgLeuHisLysArgGlyLysMetGlnSerGluLysMetProSerGluGln-823

a705**AMPHI Regions - AMPHI**

67-LysIleLeuLeuLysLeu-72
104-AspProIleProAla-108
147-TyrMetGlnThrPheArgArgIleValAlaProGln-158
169-AsnGluPheIleGlyLeuPheLysAsn-177

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183-ValValThrValThrGluLeuPheArgValAlaGln-194
196-ThrAlaAsnArgThr-200

Antigenic Index - Jameson-Wolf

13-ThrGluThrArgAlaAspMet-19
132-ValProLysGlyGlnTrpGlu-138
165-ProProLeuSerAsnGlu-170
193-AlaGlnGluThrAlaAsnArgThrTyrAsp-202
226-AlaArgLeuGluLysArgPheAspArgTyrValAla-237

Hydrophilic Regions - Hopp-Woods

13-ThrGluThrArgAlaAspMet-19
193-AlaGlnGluThrAlaAsnArgThr-200
226-AlaArgLeuGluLysArgPheAspArgTyrValAla-237
a706

AMPHI Regions - AMPHI

9-LeuValSerArgTrpLeuAsnSerTyr-17
24-ArgLeuIleHisAlaValArg-30
70-IleTyrSerLysAlaValGluArgMetLeuGlyThrValIleGly-84
111-ThrAlaSerAlaLeuAlaGlyTrpAlaAla-120
153-ArgAlaMetAsnValLeu-158
183-LeuAlaAspAsnLeuThrAspCysSerLysMetIleAlaGluIleSerAsnGlyArg-201
204-ThrArgGluArgLeuGluGluAsn-211
243-MetGluAlaMetGlnHisAlaHisArgLysIleVal-254
318-AlaLeuAlaGluHisLeuHis-324

Antigenic Index - Jameson-Wolf

1-MetAsnThrSerGlnArgAsnArgLeu-9
11-SerArgTrpLeuAsnSerTyrGluArgTyrArgTyrArgArg-24
73-LysAlaValGluArgMetLeu-79
97-HisTyrPheHisGlyAsnLeu-103
122-GlyLysAsnGlyTyrVal-127
140-GlyAspAsnGlySerGluTrpPheAsp-148
186-AsnLeuThrAspCysSerLysMetIleAlaGluIleSerAsnGlyArgArgMetThrArgGluArgLeuGlu
GluAsnMetAlaLysMetArgGlnIleAsn-219
221-ArgMetValLysSerArgSerHisLeuAlaAlaThrSerGlyGluSerArgIleSer-239
249-AlaHisArgLysIleValAsn-255
266-LysLeuGlnSerProLysLeuAsnGlySerGluIleArgLeuLeuAsp-281
300-GlyArgHisAlaArgArgIleArgIleAspThrAlaIleAsnProGluLeuGluAlaLeuAla-320
334-SerThrAsnMetArgGlnGluIle-341
349-GlnArgThrArgArgLysTrpLeuAspAlaHisGluArgGlnHisLeu-364
367-SerLeuLeuGluThrArgGluHisSer-375

Hydrophilic Regions - Hopp-Woods

3-ThrSerGlnArgAsnArgLeu-9
17-TyrGluArgTyrArgTyrArgArg-24
73-LysAlaValGluArgMetLeu-79
142-AsnGlySerGluTrpPhe-147
186-AsnLeuThrAspCysSerLysMetIleAla-195
198-SerAsnGlyArgArgMetThrArgGluArgLeuGluGluAsnMetAlaLysMetArgGlnIleAsn-219
221-ArgMetValLysSerArgSerHis-228
232-ThrSerGlyGluSerArgIle-238
249-AlaHisArgLysIleValAsn-255
266-LysLeuGlnSerProLysLeuAsnGlySerGluIleArgLeuLeuAsp-281

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301-ArgHisAlaArgArgIleArgIle-308
 314-ProGluLeuGluAlaLeuAla-320
 336-AsnMetArgGlnGluIle-341
 349-GlnArgThrArgArgLysTrpLeuAspAlaHisGluArgGlnHisLeu-364
 367-SerLeuLeuGluThrArgGluHisSer-375
a707

AMPHI Regions - AMPHI

16-AsnLeuSerArgLeuGlnLysAla-23
 98-GluGlnGlyLeuGluAsnLeuArgArgLeuProSerVal-110
 147-GlyGlyLysThrThrGlyLysTyr-154
 222-ArgTyrHisGluAlaThrGlu-228
 267-ThrArgGlnThrTyrLysTyrIleAspAsp-276
 467-HisLysProLysGlyPheGlnThrThrAsnThr-477

Antigenic Index - Jameson-Wolf

1-XxxLysGluThrAlaPhe-6
 13-GlySerAsnAsnLeuSerArgLeuGlnLysAlaAla-24
 42-ProGlnAsnMetAspSerGlyIleLeu-50
 53-ArgValSerAlaGlyGluIleGlyAspIleArgTyrGluGluLysArgAspXxxLysSerAlaGluGlySerIle-77
 79-AlaPheAsnAsnLysXxxProLeuTyrArgAsnLysIleLeuAsn-93
 95-ArgAspValGluGlnGlyLeuGluAsnLeuArgArgLeuProSerValLysThrAspIle-114
 117-IleProSerGluGluGluGlyLysSerAspLeu-127
 130-LysTrpGlnGlnAsnLysProIleArg-138
 141-IleGlyIleAspAspAlaGlyGlyLysThrThrGlyLysTyrGlnGly-156
 162-XxxAspAsnProLeuGlyLeuSer-169
 180-LeuValHisLysThrAspLeuThrXxxAlaThrGlyThrGluThrGluSerGlySerArgSerTyr-201
 216-PheAsnHisAsnGlyHisArgTyrHisGluAlaThrGluGlyTyrSerValAsnTyrAspTyrAsnGlyLysGlnTyrGln-242
 269-GlnThrTyrLysTyrIleAspAspAlaGluIleGluValGlnArgArgArgSerAlaGlyTrpGluAlaGluLeuArgHis-295
 303-GlnLeuAspGlyLysLeuSerTyrLysArgGlyThrGlyMetArgGlnSerMetProAlaProGluGluAsnGlyGlyGlyThrIleProXxxXxxSerArgMetLysIle-339
 366-GlnTrpAsnLysThrPro-371
 374-AlaGlnAspLysLeuSerIleGlySerArgTyrThrValArgGlyPheAspGlyGluGlnSerLeuPheGlyGluArgGlyPheTyrTrpGlnAsnThr-406
 421-AlaAspTyrGlyArgValSerGlyGluSerAla-431
 434-ValSerGlyLysGln-438
 446-PheArgGlyGlyHisLysValGlyGly-454
 464-LysProLeuHisLysProLysGlyPheGln-473

Hydrophilic Regions - Hopp-Woods

1-XxxLysGluThrAlaPhe-6
 16-AsnLeuSerArgLeuGlnLysAlaAla-24
 58-GluIleGlyAspIleArgTyrGluGluLysArgAspXxxLysSerAlaGluGlySer-76
 95-ArgAspValGluGlnGlyLeuGluAsnLeuArgArgLeuProSerValLysThrAspIle-114
 118-ProSerGluGluGluGlyLysSerAspLeu-127
 141-IleGlyIleAspAspAlaGlyGlyLysThrThrGlyLysTyr-154
 180-LeuValHisLysThrAspLeu-186
 190-ThrGlyThrGluThrGluSerGlySerArgSer-200
 222-ArgTyrHisGluAlaThrGlu-228
 273-TyrIleAspAspAlaGluIleGluValGlnArgArgArgSerAlaGlyTrp-289
 291-AlaGluLeuArgHis-295

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306-GlyLysLeuSerTyrLysArgGlyThrGlyMetArgGlnSerMetProAlaProGluGluAsnGlyGly-328
 333-XxxXxxSerArgMetLysIle-339
 374-AlaGlnAspLysLeuSerIle-380
 388-GlyPheAspGlyGluGln-393
 422-AspTyrGlyArgValSerGlyGluSer-430
 465-ProLeuHisLysProLysGly-471
a708

AMPHI Regions - AMPHI

26-ProSerArgAlaGluLysAlaAsnGlnValSerAsnIle-38
 57-AlaSerIleGluAspAlaLeuLysSerAspPro-67
 79-IleTyrGlnTyrLeuLys-84
 89-AlaGlnGluSerPhe-93
 119-AsnArgProAlaGluSerMetAla-126
 128-PheAspLysAlaLeu-132
 142-IleAlaAsnLeuAsnLys-147
 176-ProAlaPheLysGluLeuAlaArg-183
 221-LysAlaLeuGlyAsnAlaGln-227

Antigenic Index - Jameson-Wolf

2-ProPheLysProSerLysArgIleSer-10
 19-AlaCysSerThrSerTyrArgProSerArgAlaGluLysAlaAsnGln-34
 46-TyrMetArgGlyGlnAspTyrArgGlnXxxThrAlaSerIleGluAspAlaLeuLysSerAspProLysAsnGlu-70
 84-LysValAsnAspLysAlaGlnGluSerPheArg-94
 97-LeuSerIleLysProAspSerAlaGluIleAsnAsnAsnTyr-110
 115-CysGlyArgLeuAsnArgProAlaGlu-123
 131-AlaLeuAlaAspProThrTyrProXxx-139
 146-AsnLysGlyIleCysSerAlaLysGlnGlyGln-156
 176-ProAlaPheLysGluLeuAlaArgThrLysMet-186
 191-LeuGlyAspAlaAspTyrTyrPheLysLysTyrGlnSerArgValGluValLeuGlnAlaAspAspLeu-213
 240-PheProTyrSerGluGluLeuGln-247

Hydrophilic Regions - Hopp-Woods

4-LysProSerLysArgIle-9
 24-TyrArgProSerArgAlaGluLysAlaAsnGln-34
 46-TyrMetArgGlyGlnAspTyrArgGlnXxxThrAlaSerIleGluAspAlaLeuLysSerAspProLysAsnGlu-70
 84-LysValAsnAspLysAlaGlnGluSerPheArg-94
 99-IleLysProAspSerAlaGluIle-106
 117-ArgLeuAsnArgProAlaGlu-123
 149-IleCysSerAlaLysGlnGly-155
 177-AlaPheLysGluLeuAlaArgThrLysMet-186
 201-TyrGlnSerArgValGluValLeuGlnAlaAspAspLeu-213
a709

AMPHI Regions - AMPHI

6-SerLeuLeuAspMetProArgGlyGlu-14
 18-ValValValAlaLeuIleAlaAlaMetGly-27
 37-ProHisMetSerIleIleAlaAlaIleValValLeu-48
 54-AlaArgGlyLeuLysTyrAsn-60
 64-GlnGlyMetIleGlyAlaLeuAsnGlnGly-73
 115-SerAlaPheAlaLeuCysSerVal-122

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130-SerLeuThrThrCysAlaThrVal-137
 168-LysMetSerProLeuSerAspThrXxx-176
 185-IleAspLeuPheGluHisIleLysAsnMetMetTyrThrThr-198
 209-MetLeuXxxLeuLeuPro-214
 221-LeuAsnSerValGluSerPheArg-228
 234-ThrGlyLeuValHisCysTyrSerLeuIleProPheAlaLeuLeuValValLeu-251
 261-AlaMetLeuPheThrValIleAlaAlaValAlaValThrTyr-274
 278-ThrProAspLeuArgGlnLeuGlyAlaTrpPhe-288
 299-XxxXxxAspIleAlaLysLeuIleSerArgGlyGly-310
 334-LeuGlyAlaIleProSerLeuLeuAspAlaValArgSerPheLeuThr-349
 382-ThrPheLysProVal-386
 395-ArgAsnLeuSerArgThrLeuGluAspAlaGlyThrValIleAsnProLeuValProTrpSerValCysGly
 ValPheIleXxxHis-423

Antigenic Index - Jameson-Wolf

9-AspMetProArgGlyGluAla-15
 55-ArgGlyLeuLysTyrAsnAspMetGln-63
 164-XxxXxxGlyXxxLysMetSerProLeuSerAspThrXxxGlyXxxSer-179
 222-AsnSerValGluSerPheArgSerGlnLeuGlu-232
 277-SerThrProAspLeuArgGln-283
 290-GlyGlyTyrLysLeuGluGlyGluAlaXxxXxxAspIleAlaLysLeuIleSerArgGlyGlyLeuGlu-312
 349-ThrAsnAlaGlyArgXxxThr-355
 378-LeuSerGlyGluThrPheLysProValTyrAspLysLeuGlyLeuHisSerArgAsnLeuSerArgThrLeu
 GluAspAlaGlyThr-406

Hydrophilic Regions - Hopp-Woods

9-AspMetProArgGlyGluAla-15
 57-LeuLysTyrAsnAspMetGln-63
 165-XxxGlyXxxLysMetSerProLeuSerAspThrXxxGly-177
 225-GluSerPheArgSerGlnLeuGlu-232
 279-ProAspLeuArgGln-283
 293-LysLeuGluGlyGluAlaXxxXxxAspIleAlaLysLeuIleSer-307
 396-AsnLeuSerArgThrLeuGluAspAlaGly-405

a710**AMPHI Regions** - AMPHI

6-LysIleArgLeuMetArgGluLeuAsnLysTrpSerGln-18
 31-GlyTyrAlaLysIleGlu-36
 45-ProArgLeuGluGlnLeuAlaGlnIlePheLysIleAspMetTrpAspLeuLeuLys-63
 105-CysLysGluMetLeuGlu-110

Antigenic Index - Jameson-Wolf

1-MetGluThrHisGluLysIleArgLeuMetArgGluLeuAsnLysTrpSerGlnGluAspMetAlaGluLysLeuAla-26
 33-AlaLysIleGluArgGlyGluThrGlnLeuAsnIleProArgLeuGluGln-49
 62-LeuLysSerGlyGlyGlyGly-68
 74-AsnAspValAspThrAsnSerGlyGlu-82
 88-AlaGlnAspAlaSerGlyLys-94
 100-MetGluLeuLysHisCysLysGluMetLeuGluHisLysAspLysGluIleGluLeuLeuArgLysLeuThr
 Glu-124

Hydrophilic Regions - Hopp-Woods

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1-MetGluThrHisGluLysIleArgLeuMetArgGluLeuAsnLysTrpSerGlnGluAspMetAlaGluLysLeuAla-26
 33-AlaLysIleGluArgGlyGluThr-40
 45-ProArgLeuGluGln-49
 74-AsnAspValAspThrAsnSerGly-81
 100-MetGluLeuLysHisCysLysGluMetLeuGluHisLysAspLysGluIleGluLeuLeuArgLysLeuThrGlu-124
a711

AMPHI Regions - AMPHI

28-AlaGluSerTyrArgAsnLeuThrAlaSerGluIleAlaLysValTyrThrIleAlaArgMetThr 49
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AspLeuAspMetLeuAsnAspIleLys-58
 67-SerGlyGlnSerPheAspAspTrpArgLysGlyIleLeu-79
 95-GlyLysAspIleIleAspProAlaThrGlyGluValPheGlySerProArgArgLeuGluThrIleTyrArgThrAsnMet-121
 128-GlyGlnTyrGlnGlyTyrMet-134
 158-SerAlaIleAspGly-162
 195-ValGluArgGlnGly-199
 207-SerAspAsnLeuValGluThrHis-214
 258-LysTyrAspArgAlaLeuAlaHisGlnPheAla-268
 281-PheLysGlnLeuGluLysGluPheTyr-289
 329-GlnGluLeuAlaGlyMetThr-335
 352-SerArgGluGlyGlnAsnPhe-358
 360-AspSerTyrTyrAlaPheLeuProAspMetLeuGlnAsnProGlu-374
 395-TrpAlaValLeuLysTyrIleLysGluValAspGluIle-407
 413-ArgIleSerAsnAspLysGluIleAlaLys-422

Antigenic Index - Jameson-Wolf

11-SerLeuProProLysLysAlaIleGlu-19
 21-LeuGluSerLysLysValThrAlaGluSerTyrArgAsnLeuThr-35
 55-AsnAspIleLysThrSerMet-61
 63-GluSerAlaLysSerGlyGlnSerPheAspAspTrpArgLysGlyIle-78
 82-LeuSerAsnLysGlyTrpLeuHisProAsnGlyHisAsnGlyLysAspIleIleAspProAlaThrGlyGluValPheGlySerProArgArgLeuGluThrIleTyrArgThrAsnMet-121
 126-AsnAlaGlyGlnTyrGlnGly-132
 135-AlaAsnIleAspAlaArgProTyrTrp-143
 147-AlaValGlyAspSerArgThrArgProAlaHisSerAla-159
 165-TyrArgTyrAspAspProPheTrp-172
 177-ProProAsnGlyTyrAsnCysArgCysSer-186
 190-LeuSerGluArgAspValGluArgGlnGlyArgIleValGlyGlnSerThrSerAspAsnLeuValGlu-212
 215-LysIleTyrAsnLysLysGlyAspThr-223
 229-TyrLysAlaProAspGlySerLeuTyrThrThrAspArgGlyPheAspTyrAsnAlaGlyArgMetAsnTyrArgProAspLeuAspLysTyrAspArgAlaLeu-263
 268-AlaLysAlaGluMetGlyGlyAlaAspPheLysThrSerPheLysGlnLeuGluLysGluPheTyrGluValLysGlnArgLeuAspIleAspGlyLysProAspLysGluGlnLysIleLysIleArgAsnAlaLeu-313
 324-LeuSerLysGluThrGlnGlu-330
 342-SerAspAspThrLeuValLysGlnValAspSerArgGluGlyGlnAsnPheAspAspSerTyrTyr-363
 370-LeuGlnAsnProGluHisValIleArgAspAsnArgGlu-382
 387-AlaArgTyrLysGlySer-392
 400-TyrIleLysGluValAspGlu-406
 411-SerTyrArgIleSerAsnAspLysGluIleAla-421
 424-MetAlaLysLysLysValLeuLys-431

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Hydrophilic Regions - Hopp-Woods

13-ProProLysLysAlaIleGlu-19
 21-LeuGluSerLysLysValThrAlaGluSerTyrArg-32
 55-AsnAspIleLysThrSerMet-61
 63-GluSerAlaLysSerGlyGlnSerPheAspAspTrpArgLys-76
 93-HisAsnGlyLysAspIleIleAsp-100
 108-GlySerProArgArgLeuGluThr-115
 147-AlaValGlyAspSerArgThrArgProAla-156
 190-LeuSerGluArgAspValGluArgGlnGlyArgIleVal-202
 205-SerThrSerAspAsnLeuValGlu-212
 215-LysIleTyrAsnLysLysGlyAspThr-223
 238-ThrThrAspArgGlyPheAsp-244
 250-MetAsnTyrArgProAspLeuAspLysTyrAspArgAlaLeu-263
 268-AlaLysAlaGluMetGlyGlyAlaAspPheLysThrSerPheLysGlnLeuGluLysGluPheTyrGluVal
 LysGlnArgLeuAspIleAspGlyLysProAspLysGluGlnLysIleLysIleArgAsnAlaLeu-313
 324-LeuSerLysGluThrGlnGlu-330
 344-AspThrLeuValLysGlnValAspSerArgGluGlyGlnAsnPheAsp-359
 375-HisValIleArgAspAsnArgGlu-382
 400-TyrIleLysGluValAspGlu-406
 414-IleSerAsnAspLysGluIleAla-421
 424-MetAlaLysLysLysValLeuLys-431

a713**AMPHI Regions - AMPHI**

18-GluHisArgHisTrpGlu-23
 115-AspAlaAlaLysLysLeuAlaAlaProTrpProGlnIle-127
 150-ThrValTrpGlnAlaLeuThrHisIleAlaAsnSerVal-162
 257-AspAsnLeuAlaAlaLeuGln-263
 265-GlnAlaLysLysGln-269

Antigenic Index - Jameson-Wolf

1-MetGlnAsnAsnSerTyrGly-7
 13-ArgValGlyGlyLysGluHisArgHisTrpGluArgTyrAspIleAspSerAspPhe-31
 44-ArgLeuGlyProGluAlaAlaIleProAspLeuSerGlyGluSerCysGluValValIle-63
 74-GlySerGlnArgHisGlyLysSerLysGlyGlyArgGluLeuSerLeuSerGlyArgAspLeu-94
 106-LeuAsnValLysGly-110
 115-AspAlaAlaLysLysLeu-120
 134-ValGluAsnAsnProAlaLeuAspLysIleAspIleGluProGlyGluThrVal-151
 167-TrpLeuGluProAspGlyThrLeu-174
 192-SerArgThrAspSerArgArgAsnIleGluArgMetAspIleGluTrpAspThrAspAsnArgPheSerGlu
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 222-SerHisGlyArgSerGlyAspSerAlaLysHisAspLeu-234
 236-TrpValTyrLysAspProThrMetThrLeuHisArgProLysThrValVal-252
 254-SerAspAlaAspAsn-258
 263-GlnLysGlnAlaLysLysGlnLeuAla-271
 284-ValGlyGlyHisLysThrArgAspGly-292
 302-HisValIleAspAspGluHisGlyIle-310
 321-PheMetLeuSerArgMetAspGlyThrGlnThrGluLeuArgLeuLysGluAspGlyIleTrpThrProAsp
 AlaTyrProLysLysAlaGluAlaAlaArgLysArgLysGlyLysArgLysGlyValSerHisLysGlyLysLysG
 lyGlyLysLysGlnAlaGlu-376

Hydrophilic Regions - Hopp-Woods

14-ValGlyGlyLysGluHisArgHisTrpGluArgTyrAspIleAspSer-29
 54-LeuSerGlyGluSerCysGluValValIle-63

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76-GlnArgHisGlyLysSerLysGlyGlyArgGluLeuSerLeuSerGlyArgAspLeu-94
 115-AspAlaAlaLysLysLeu-120
 138-ProAlaLeuAspLysIleAspIleGluProGlyGlu-149
 168-LeuGluProAspGly-172
 193-ArgThrAspSerArgArgAsnIleGluArgMetAspIleGluTrpAspThrAspAsnArgPheSer-214
 222-SerHisGlyArgSerGlyAspSerAlaLysHisAspLeu-234
 246-HisArgProLysThr-250
 254-SerAspAlaAspAsn-258
 263-GlnLysGlnAlaLysLysGlnLeuAla-271
 286-GlyHisLysThrArgAsp-291
 302-HisValIleAspAspGluHisGlyIle-310
 325-ArgMetAspGlyThrGlnThrGluLeuArgLeuLysGluAspGlyIleTrp-341
 345-AlaTyrProLysLysAlaGluAlaAlaArgLysArgLysGlyLysArgLysGlyValSerHisLysGlyLys
 LysGlyGlyLysLysGlnAlaGlu-376

a714**AMPHI Regions - AMPHI**

6-IleLeuArgGlyLeuLeuPro-12
 34-LeuAspAlaValAlaGluSerAlaGlnSerValAlaAspAlaValAspProSer-51
 55-GlnMetLeuAlaAspTrpGluArgValLeuGlyLeu-66
 79-AlaValMetAlaLysLeuAsnGluThrGly-88
 98-LeuAlaGluAlaAla-102
 110-GluProGlnProPhe-114
 116-AlaGlyValAsnArgAlaGlyAspArgLeu-125
 155-AlaGlyAspArgLeuThrAspTyrSerAspAlaValIleGluSerLeuPheAsnArgLeuLys-175

Antigenic Index - Jameson-Wolf

15-SerTyrAlaArgAsnAlaProArgValArgAlaGlnAlaGluIleAspGlyAlaAla-33
 36-AlaValAlaGluSerAlaGlnSerVal-44
 46-AspAlaValAspProSerSerAlaGly-54
 64-LeuGlyLeuAspGlyThrGlyLysAsnArgGlnArgArgVal-77
 83-LysLeuAsnGluThrGlyGlyLeu-90
 107-GlnIleAspGluProGlnProPheArgAlaGlyValAsnArgAlaGlyAspArgLeuAlaPro-127
 138-ValArgGlyGlyAsnAsnArgIleThrArgPheArgAlaGlyIle-152
 154-AlaAlaGlyAspArgLeuThrAspTyrSerAspAlaValIle-167
 170-LeuPheAsnArgLeuLysPro-176

Hydrophilic Regions - Hopp-Woods

18-ArgAsnAlaProArgValArgAlaGlnAlaGluIleAspGlyAlaAla-33
 36-AlaValAlaGluSerAlaGlnSerVal-44
 46-AspAlaValAspProSerSer-52
 68-GlyThrGlyLysAsnArgGlnArgArgVal-77
 107-GlnIleAspGluProGlnProPhe-114
 117-GlyValAsnArgAlaGlyAspArgLeuAlaPro-127
 139-ArgGlyGlyAsnAsnArgIleThrArgPheArgAla-150
 154-AlaAlaGlyAspArgLeuThrAspTyrSerAspAlaValIle-167
 170-LeuPheAsnArgLeuLysPro-176

a715**AMPHI Regions - AMPHI**

15-GlnIleGluArgLeuGlyAsnGlyIle-23
 31-ArgArgLeuSerGluThrMetHis-38
 64-LeuSerAspSerGlyArgLeuLysAspSerPheSer-75
 94-IleHisAsnPheGlyGly-99

Antigenic Index - Jameson-Wolf

15-GlnIleGluArgLeuGlyAsnGlyIleGluAsnArgTyrLeuLeu-29

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47-TyrAlaGlyArgProLysTrpLeuGlyLeuLysTyrArgAspGlyLysProLeuSerAspSerGlyArgLeuLysAspSerPheSerThrLeuSerAspAsnAspThrAla-83
 98-GlyGlyMetAlaGlyArgAsnArgLysValArgIleProGlnArgGluPhe-114
 118-ThrAspAspAspLysGlnAlaLeuMetAspAspValGlnAsp-131

Hydrophilic Regions - Hopp-Woods

15-GlnIleGluArgLeuGlyAsn-21
 57-LysTyrArgAspGlyLysProLeuSerAspSerGlyArgLeuLysAspSerPhe-74
 78-SerAspAsnAspThr-82
 101-AlaGlyArgAsnArgLysValArgIleProGlnArgGlu-113
 118-ThrAspAspAspLysGlnAlaLeuMetAspAspValGlnAsp-131

a716**AMPHI Regions - AMPHI**

33-GlyValHisLysSerAlaHisGly-40
 71-AlaThrValLysLysThrHisLysHisThrLysAla-82

Antigenic Index - Jameson-Wolf

1-MetAsnLysAsnIle-5
 23-AlaAlaAsnLysProAlaSerAsnAlaThrGlyValHisLysSerAlaHisGlySerCysGlyAlaSerLysSerAlaGluGlySerCysGlyAlaAlaGlySerLysAlaGlyGluGlyLysCysGlyGluGlyLysCysGlyAlaThrValLysLysThrHisLysHisThrLysAlaSerLysAlaLysAlaLysSerAlaGluGlyLysCysGlyGluGlyLysCysGlySerLys-102

Hydrophilic Regions - Hopp-Woods

23-AlaAlaAsnLysProAlaSer-29
 33-GlyValHisLysSerAlaHis-39
 43-GlyAlaSerLysSerAlaGluGlySerCys-52
 55-AlaGlySerLysAlaGlyGluGlyLysCysGlyGluGlyLysCys-69
 71-AlaThrValLysLysThrHisLysHisThrLysAlaSerLysAlaLysAlaLysSerAlaGluGlyLysCysGlyGluGlyLysCysGlySerLys-102

a717**AMPHI Regions - AMPHI**

175-AlaValTyrAlaLeuAlaAsn-181
 209-LeuHisArgGlyLeu-213
 223-SerIleAlaTyrTrp-227
 241-AlaGlyLeuGluGlnLeuGly-247
 263-GlnSerIlePheSerThrValTrpThrProTyrIlePheArgAlaIleGluAla-280
 305-ThrGlyIlePheSerProLeuAlaSer-313
 347-LeuAsnValValArgLysThr-353
 358-LeuAlaThrLeuGlyAlaLeuAla-365
 401-SerSerCysArgLeuTrpGlnProLeuLysArgLeu-412
 430-CysPheGlyThrPro-434
 442-GlyValTrpAlaValTyrLeuAla-449
 457-LysAspLeuHisLysLeuPheHisTyr-465

Antigenic Index - Jameson-Wolf

1-MetAspThrLysGlu-5
 32-ProAlaAspAspIleGlyArg-38
 69-AlaAspLysAspThrLeu-74
 95-SerArgProSerLeuProSerGluIle-103
 135-MetGluGlyArgAla-139
 192-AsnArgCysArgLeuLysAlaValArgArgAlaProPheSerSer-206
 231-SerAlaAspArgLeuPheLeu-237
 278-IleGluAlaAsnAlaProProAlaArgLeu-287
 289-AlaThrAlaGluSer-293

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317-ProGluAsnTyrAla-321
 349-ValValArgLysThrArgProIleAla-357
 376-ProSerGlyGlyAlaArgGly-382
 398-LysThrGluSerSerCysArgLeu-405
 453-LeuArgHisArgLysAspLeuHis-460

Hydrophilic Regions - Hopp-Woods

1-MetAspThrLysGlu-5
 69-AlaAspLysAspThrLeu-74
 135-MetGluGlyArgAla-139
 192-AsnArgCysArgLeuLysAlaValArgArgAlaProPhe-204
 281-AsnAlaProProAlaArgLeu-287
 289-AlaThrAlaGluSer-293
 349-ValValArgLysThrArgPro-355
 378-GlyGlyAlaArgGly-382
 399-ThrGluSerSerCys-403
 453-LeuArgHisArgLysAspLeuHis-460

a718-1**AMPHI Regions - AMPHI**

28-IleThrAlaThrGlyArgValIleAlaGluHisProSerAsnPheIleThrProGln-46
 49-ArgAlaLeuPheGlu-53
 110-AspGlnAlaTyrGluMetMetAspSerLeuProThr-121
 124-AspLeuIleMetAspLeuMetAspAlaValGlyHisGly-136
 160-ProGlnSerTrpPheLys-165
 198-ArgSerValGlnGln-202
 210-ThrLeuSerTrpLeuTyrMetPhe-217
 219-HisTyrAlaValHisAspPheAlaGluPheLeuGluLeu-231
 255-ArgAlaValAlaGluIle-260
 279-AlaAlaAsnGlyMetThrSer-285
 320-ThrAsnAlaLeuGlyAsnIleHisAsnGluIleArg-331
 341-GlnValAlaGlnThrIleThrSerGlnIleIleGlyProPhe-354
 363-AspProAsnArgVal-367
 376-GluProLysAspIleAlaValPheAlaAspAlaIleProLysLeuValAsp-392
 395-ValGlnIleProGlu-399
 420-ArgGlnValProAspAsnPro-426
 448-HisGlnGluIleLeuAspGlyAlaLeuAspAsp-458
 469-LeuAsnProMetValArgGlnAlaValAlaAlaLeuAsnAlaCysAsnSerTyrGlu-487

Antigenic Index - Jameson-Wolf

4-IleMetAlaLysLysAsnAsnLysThrLysIleGlnLysProGluAlaAlaLeu-21
 30-AlaThrGlyArgValIleAla-36
 38-HisProSerAsnPhe-42
 44-ThrProGlnLysMetArgAlaLeuPheGluAspAlaGluSerGlyAspIleArgAlaGlnHis-64
 68-AlaAspIleGluGluArgAspSerAspIle-77
 81-MetGlyThrArgLysArgAla-87
 95-ValAlaProProArgAsnAlaThrProGluGluGluLysLeuSerAspGlnAlaTyrGluMet-115
 119-LeuProThrLeuGlu-123
 148-AspGlyLeuTyrLeuProArgAsnPheIleHisArgProGlnSerTrpPheLysTrpAspLysAspAsnGly
 Leu-172
 174-LeuArgThrArgGluAsnProGluGlyGluAla-184
 193-HisThrGlnLysSerArgSerValGlnGlnAlaArgAsnGlyLeuPhe-208
 237-ArgIleGlyLysTyrGlyAlaGlyAlaThrLysGluGluLysAsnThrLeu-253
 268-MetProGluGlyMetGluIleGluLeu-276
 280-AlaAsnGlyMetThrSerAla-286
 295-AspTrpCysGluLysSerAlaAla-302

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310-LeuThrSerGlyAlaAspGlyLysSerSerThrAsnAlaLeuGly-324
 328-AsnGluIleArgArgAspLeuLeuValSerAspAlaLysGlnVal-342
 359-TyrProHisAlaAspProAsnArgValProLysPheGluPheAspThrArgGluProLysAspIle-380
 397-IleProGluSerTrpValArgAspLysLeuVal-407
 410-AspValGlnGluGlyGluAlaValLeu-418
 420-ArgGlnValProAspAsnProValAsnArg-429
 440-ValProSerLysAlaThrGlyArgHisGlnGluIleLeuAspGlyAlaLeuAsp-457
 459-AlaLeuValGluProAspPheAsnSerGlnLeu-469
 484-AsnSerTyrGluGluAlaAspAla-491
 499-AsnLeuAspAsnAlaLysLeuArgThr-507
 519-LeuGlyGlnAspHisAlaArgAla-526

Hydrophilic Regions - Hopp-Woods

4-IleMetAlaLysLysAsnAsnLysThrLysIleGlnLysProGluAlaAlaLeu-21
 46-GlnLysMetArgAlaLeuPheGluAspAlaGluSerGlyAspIleArgAlaGlnHis-64
 68-AlaAspIleGluGluArgAspSerAspIle-77
 81-MetGlyThrArgLysArgAla-87
 96-AlaProProArgAsnAlaThrProGluGluGluLysLeuSerAspGlnAlaTyrGluMet-115
 165-LysTrpAspLysAspAsnGlyLeu-172
 174-LeuArgThrArgGluAsnProGluGlyGluAla-184
 195-GlnLysSerArgSerValGlnGlnAlaArg-204
 245-AlaThrLysGluGluLysAsnThrLeu-253
 270-GluGlyMetGluIleGluLeu-276
 295-AspTrpCysGluLysSerAlaAla-302
 312-SerGlyAlaAspGlyLysSerSerThr-320
 328-AsnGluIleArgArgAspLeuLeuValSerAspAlaLysGlnVal-342
 363-AspProAsnArgValProLysPheGluPheAspThrArgGluProLysAsp-379
 401-TrpValArgAspLysLeuVal-407
 410-AspValGlnGluGlyGluAlaValLeu-418
 421-GlnValProAspAsnProValAsn-428
 440-ValProSerLysAlaThrGlyArgHisGlnGluIleLeuAspGlyAlaLeuAsp-457
 485-SerTyrGluGluAlaAspAla-491
 501-AspAsnAlaLysLeu-505
 522-AspHisAlaArgAla-526

a720**AMPHI Regions - AMPHI**

19-GlnAlaValArgLeuLeuSerThrSer-27
 46-AlaProAspLeuIleGluValAsn-53
 66-AlaLeuArgAlaValGlnThrAla-73
 91-GlnThrAlaGluSerLeu-96
 102-ArgLeuAsnAlaLeuValAla-108
 126-GlyThrIleHisGlnIleAlaHisGluPheTyrGlyAspIleAlaArgAlaAlaGluLeuVal-146

Antigenic Index - Jameson-Wolf

1-GlyLeuGlnAsnArgLeuAsnArgLeuThrAlaLysGlnVal-14
 39-AlaHisGlyGluGluMetThrAla-46
 48-AspLeuIleGluValAsnArgAlaMetArgArgArgMetGlnAla-62
 74-AlaAlaGluSerGlyGlyLeuThrAla-82
 91-GlnThrAlaGluSerLeuArgAlaAlaAla-100
 112-AsnGlnLysProProLeu-117
 121-GlnAlaProIleAspGlyThr-127
 139-IleAlaArgAlaAlaGlu-144
 157-PheIleLysArgGlyThrLeuValAsnSerTyrAlaLys-169

Hydrophilic Regions - Hopp-Woods

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4-AsnArgLeuAsnArgLeuThrAla-11
39-AlaHisGlyGluGluMetThrAla-46
48-AspLeuIleGluValAsnArgAlaMetArgArgArgMetGlnAla-62
74-AlaAlaGluSerGlyGly-79
94-GluSerLeuArgAlaAlaAla-100
139-IleAlaArgAlaAlaGlu-144

a721**AMPHI Regions - AMPHI**

86-AlaGlyTrpMetArgTrpLeuGlu-93
119-ArgTyrIleSerAlaVal-124
134-SerLysIlePheHisAlaAlaLeuThrAsnPheProAlaLeuAspGlyMetAspGluValLeuAla-155
169-AsnProMetLysGluLeuLeuGlnGlnLeuPheGlyLeu-181
209-AspValPheAlaGln-213
235-LysTyrAlaProIleSerValValGlnGluLeuGln-246
281-TrpAlaGluGlyValLeuLysGlnProGlyGly-291
293-AlaPheLeuThrGlyPheIleGlu-300

Antigenic Index - Jameson-Wolf

1-MetSerLysAsnAlaGln-6
16-GluValGlnProLysAspGlyArgIle-24
27-LeuProTyrGlyGlu-31
33-ArgAlaValAspGlyArgProThrAspValProAla-44
48-ThrGluGluAsnGlyHisAsp-54
58-LeuAlaAsnSerSerArgAsnGlnLeu-66
74-LeuTyrLysGluLysAsnGlyGlnProAlaPro-84
93-GluPheThrProLysGlyMetPheAla-101
104-GluTrpThrAspLysAlaAla-110
114-AlaAlaLysGluTyrArg-119
125-PheSerTyrAspThrLysGlyTyrVal-133
148-AspGlyMetAspGluValLeu-154
160-GlnIleLeuLysProGluThrGluGlnAsnProMetLysGluLeuLeu-175
182-ProAspAlaGlyGluGluGluLeuLysAla-191
197-ValGluAlaLysProLysAspValAlaLeu-206
214-LeuAlaGluLysAspSerArgIle-221
227-GlnThrAlaLysProAspLeuThrLysTyrAla-237
254-AlaLysGlnGluAlaAspLysGlyAsnGlu-263
276-ProAlaGlnLysGluTrpAla-282
285-ValLeuLysGlnProGlyGly-291
310-GlySerGlnThrGlyGlyLysAlaProAspGluArgValAla-323
326-ThrAlaGluGluAlaAlaAla-332
337-GlyMetSerGlyGluGluPheValLysIleLysGluSerGluGlyLys-352

Hydrophilic Regions - Hopp-Woods

1-MetSerLysAsnAlaGln-6
17-ValGlnProLysAspGlyArgIle-24
33-ArgAlaValAspGlyArgProThrAsp-41
49-GluGluAsnGlyHis-53
74-LeuTyrLysGluLysAsnGlyGln-81
104-GluTrpThrAspLysAlaAla-110
114-AlaAlaLysGluTyrArg-119
148-AspGlyMetAspGluValLeu-154
162-LeuLysProGluThrGluGlnAsnProMetLysGluLeuLeu-175
183-AspAlaGlyGluGluGluLeuLysAla-191
197-ValGluAlaLysProLysAspValAlaLeu-206
214-LeuAlaGluLysAspSerArgIle-221

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228-ThrAlaLysProAspLeuThrLys-235
 254-AlaLysGlnGluAlaAspLysGlyAsnGlu-263
 276-ProAlaGlnLysGluTrpAla-282
 313-ThrGlyGlyLysAlaProAspGluArgValAla-323
 326-ThrAlaGluGluAlaAlaAla-332
 339-SerGlyGluGluPheValLysIleLysGluSerGluGlyLys-352

a724**AMPHI Regions - AMPHI**

6-LeuAlaLysLysThr-10
 12-GlnThrAlaLysAsnIleGlyGluThrLeuArg-22
 40-ArgValGlnLeuSer-44
 47-AlaAspGluThrLeuGlnAspLeuGluHisLeuGlnGlu-59

Antigenic Index - Jameson-Wolf

5-LysLeuAlaLysLysThrAlaGlnThrAlaLysAsnIleGlyGluThrLeuArgAlaAlaPheArgGlyLysIle-29
 34-SerSerGluProIleGlnArgValGlnLeuSerGlyLeuAlaAspGluThrLeuGlnAspLeuGluHis-56
 60-TyrGlyPheAlaSerHisProProAspGlySerGluAla-72
 77-LeuGlyGlyAsnThrSer-82
 90-GlnHisGlySerTyrArgIleLysAsnLeuLysProGlyGluThr-104
 108-AsnHisGluGlyAlaLysIleValIleLysGlnGlyLysIleIleGluAlaAspCysAspVal-128
 130-ArgValAsnCysLysGlnTyrGlu-137
 142-ThrAspAlaLysPhe-146
 162-GlnIleAsnGlyAsnGly-167
 170-AlaValGluGlyGlyAspGlyAlaThrPheSerGlyAspValAsnGlnThrGlyGlySerPheAsnThrAspGlyAspValValAla-198
 205-GlnHisProHisThrAspSerIleGlyGlyLysThrLeuProAlaGluProAla-222

Hydrophilic Regions - Hopp-Woods

5-LysLeuAlaLysLysThrAlaGlnThrAlaLysAsnIleGlyGluThrLeuArgAlaAlaPheArgGly-27
 46-LeuAlaAspGluThrLeuGlnAspLeuGluHis-56
 66-ProProAspGlySerGlu-71
 94-TyrArgIleLysAsnLeuLysProGlyGlu-103
 110-GluGlyAlaLysIleValIleLysGlnGlyLysIleIleGluAlaAspCysAspVal-128
 132-AsnCysLysGlnTyrGlu-137
 142-ThrAspAlaLysPhe-146
 190-PheAsnThrAspGlyAspVal-196
 207-ProHisThrAspSerIleGly-213

a726**AMPHI Regions - AMPHI**

12-AspThrLeuGlySerIleProGlu-19
 55-ProArgProSerGluTyrHisGlu-62
 74-AlaAlaAlaAlaArg-78
 110-IleAspSerPheTyrArg-115
 122-AlaArgGlnAlaAsp-126
 137-IleAlaAlaAlaArg-141
 180-IleGluThrAlaProGlyLeuAspAlaLeuGluLysGluIleGlu-194

Antigenic Index - Jameson-Wolf

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5-PheLysAsnGlyPheTyrAspAspThrLeuGlySerIleProGluGly-20
 24-ValArgAlaGluGluTyr-29
 37-AlaGlnGlyGlyGlnIleAlaAlaAspSerAspGlyArgProValLeuThrProProArgProSerGluTyrHisGluTrpAspGlyLysLysTrpGluIle-70
 78-ArgPheAlaGluGlnLysThr-84
 90-LeuAlaAlaLysAlaAspGluLeuLysAsnSer-100
 106-ProGlnValGluIleAspSerPheTyrArgGlnGluLysGluAlaLeuAlaArgGlnAlaAspAsnAsnAlaProThr-131
 151-LysValValGluLysSerAlaArg-158
 167-IleGlyLysArgGlnGlnLeuGluAspLysLeuAsnThr-179
 181-GluThrAlaProGlyLeuAspAlaLeuGluLysGluIleGluGlu-195

Hydrophilic Regions - Hopp-Woods

24-ValArgAlaGluGluTyr-29
 42-IleAlaAlaAspSerAspGlyArgPro-50
 55-ProArgProSerGluTyrHisGluTrpAspGlyLysLysTrpGluIle-70
 78-ArgPheAlaGluGlnLysThr-84
 90-LeuAlaAlaLysAlaAspGluLeuLysAsn-99
 114-TyrArgGlnGluLysGluAlaLeuAlaArgGlnAlaAspAsnAsnAla-129
 151-LysValValGluLysSerAlaArg-158
 167-IleGlyLysArgGlnGlnLeuGluAspLysLeuAsnThr-179
 187-AspAlaLeuGluLysGluIleGluGlu-195

a727**AMPHI Regions - AMPHI**

6-LeuLeuAlaAsnAsn-10
 12-GlnProIleAlaIleIleAla-18
 61-TyrAlaArgGluLeuGlu-66
 118-GlyCysIleAspGlyPheGly-124

Antigenic Index - Jameson-Wolf

28-HisHisGlnGlyTyrLysSerAlaPheAlaLysGln-39
 41-AlaValIleGluLysMetLysArgAspLysAlaGln-52
 60-AsnTyrAlaArgGluLeuGluGlnAlaArgAlaGluAlaLysLysTyrGluValLysAla-79
 86-LeuAlaLysLysGlnAlaGluValSerArgLeuLysThrGluAsnLysLysGluIleGluAsn-106
 108-LeuThrGlnAspArgLysAsnAlaGlyGlyGlyCysIleAspGlyPheGly-124
 135-LeuGlyTyrGlyAsn-139

Hydrophilic Regions - Hopp-Woods

41-AlaValIleGluLysMetLysArgAspLysAlaGln-52
 60-AsnTyrAlaArgGluLeuGluGlnAlaArgAlaGluAlaLysLysTyrGluValLysAla-79
 86-LeuAlaLysLysGlnAlaGluValSerArgLeuLysThrGluAsnLysLysGluIleGluAsn-106
 108-LeuThrGlnAspArgLysAsnAlaGly-116

a728**AMPHI Regions - AMPHI**

11-SerPhePheAlaLeuValPheAla-18
 39-AlaThrGluValProLysAsnPro-46
 48-AlaPheValAlaLysLeuAlaArgLeuPheArgAsnAla-60
 76-AsnLeuAlaGlyThrValAspAsp-83
 198-GluAspValTyrGluHisCysLeuGlyCysTyrGlnMet-210
 218-TyrArgAspValAlaAsnAspGlu-225
 235-SerAsnArgIleAlaSer-240
 249-GlnAsnMetArgGluLeuMetProArg-257
 355-GluLysGluValArgArgTyrAlaGluAlaAlaAlaArg-367

Antigenic Index - Jameson-Wolf

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29-IleAsnProArgTrp-33
 35-LeuSerAspThrAlaThrGluValProLysAsnProAsn-47
 57-PheArgAsnAlaAspArgAla-63
 69-GluSerIleArgThrGluGluAsnLeuAlaGlyThrValAspAspGlyProLeuGlnSerGluLysAspTyr-92
 98-ArgLeuSerArgLeuLysGluLysAlaLys-107
 112-ThrGluGlnGluHisGlyLys-118
 125-HisIleGlyGluGlyGly-130
 136-LeuSerGlnArgSerProGluAlaPheVal-145
 149-TyrLeuTyrArgAsnAspArgProPheSer-158
 166-ValHisGlyGluAsnTyrGluThrThrGlyGluTyrArgVal-179
 182-GlnProAspGlySerVal-187
 190-AlaAlaGlyArgGlyLysIleGlyGluAspValTyr-201
 217-LysTyrArgAspValAlaAsnAspGluGlnLysValTrpAspPheArgLysGluSerAsnArgIleAlaSer
 AspSerArgAsnSerValPheTyrGlnAsnMetArgGluLeuMetProArgGlyMetLysAlaAsnSer-263
 267-GlyTyrAspAlaAspGlyLeuProGlnLys-276
 280-SerPheAspAsnGlyLysLysArgGlnSerPheGluTyrTyrLeuLysAsnGlyAsn-298
 309-LeuLysAlaAspGlyValThr-315
 329-LeuAspGlyGlyArgIleValArgGluGluLysGlnGlyAspArgLeuProAspPhe-347
 352-GluAsnLeuGluLysGluValArgArgTyrAlaGluAlaAlaAlaArgArgSerGlyGlyArgArgAspLeu
 SerHis-377

Hydrophilic Regions - Hopp-Woods

38-ThrAlaThrGluValProLysAsnPro-46
 57-PheArgAsnAlaAspArgAla-63
 69-GluSerIleArgThrGluGluAsnLeu-77
 80-ThrValAspAspGlyProLeuGlnSerGluLysAspTyr-92
 98-ArgLeuSerArgLeuLysGluLysAlaLys-107
 112-ThrGluGlnGluHisGlyLys-118
 136-LeuSerGlnArgSerProGlu-142
 151-TyrArgAsnAspArgProPhe-157
 169-GluAsnTyrGluThrThrGlyGluTyr-177
 190-AlaAlaGlyArgGlyLysIleGlyGluAspValTyr-201
 217-LysTyrArgAspValAlaAsnAspGluGlnLysValTrpAspPheArgLysGluSerAsnArgIleAlaSer
 AspSerArgAsn-244
 250-AsnMetArgGluLeuMetProArgGlyMetLys-260
 268-TyrAspAlaAspGlyLeuPro-274
 282-AspAsnGlyLysLysArgGlnSer-289
 309-LeuLysAlaAspGlyValThr-315
 331-GlyGlyArgIleValArgGluGluLysGlnGlyAspArgLeuPro-345
 352-GluAsnLeuGluLysGluValArgArgTyrAlaGluAlaAlaAlaArgArgSerGlyGlyArgArgAspLeu
 SerHis-377

a729**AMPHI Regions - AMPHI**

21-CysThrMetIleProGlnTyr-27
 33-GluValAlaGluThrPheLysAsnAspThr-42
 55-HisAspTyrPheAla-59
 61-ProArgLeuGlnLysLeuIleAspIle-69
 149-GlnGlyTyrPheAla-153
 164-SerLeuIleAlaThrValAlaLys-171
 242-LeuAlaThrLeuIleAsn-247
 268-LysLeuProAlaGlyLeu-273
 322-LeuGlyGlyLeuPheLysSer-328
 371-ValGlnSerAlaPheGlnAspValAlaAsnAla-381
 388-LeuAspLysAlaTyrAspAlaLeuSerLysGlnSerArg-400

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419-GlyAlaLeuAspLeuLeuAspAla-426

442-LeuThrArgAlaGluAsnLeuAlaAspLeuTyrLysAlaLeuGlyGlyGlyLeuLys-460

Antigenic Index - Jameson-Wolf

25-ProGlnTyrGluGlnProLysValGluVal-34

36-GluThrPheLysAsnAspThrAlaAspSerGlyIleArgAlaValAsp-51

53-GlyTrpHisAspTyrPheAlaAspProArgLeuGlnLys-65

70-AlaLeuGluArgAsnThrSerLeuArgThr-79

85-GluIleTyrArgLysGlnTyrMetIleGluArgAsnAsnLeuLeuPro-100

105-AsnAlaAsnAspSerArgGlnGlySerLeuSerGlyGlyAsnValSerSerSerTyrLysVal-125

138-GlyArgValArgSerSerSerGluAlaAla-147

155-ThrAlaAsnArgAspAlaAla-161

173-TyrPheAsnGluArgTyrAlaGluGluAlaMet-183

188-ArgValLeuLysThrArgGluGluThrTyrLysLeuSerGluLeuArgTyr-204

215-ArgGlnGlnGluAlaLeuIleGluSerAlaLysAlaAspTyr-228

232-AlaArgSerArgGluGlnAlaArgAsn-240

248-GlnProIleProAspAspLeuProAla-256

277-ValLeuLeuAspArgProAspIleArgAlaAlaGluHisAlaLeuLysGlnAlaAsnAla-296

310-ArgLeuThrGlySerValAspThrHisSerAlaGlu-321

325-LeuPheLysSerGlyThr-330

347-GlyThrAsnLysAlaAsnLeuAspValAlaLysLeuArgGlnGln-361

383-ThrAlaArgGluGlnLeuAspLysAlaTyrAspAlaLeuSerLysGlnSerArgAlaSerLysGluAlaLeu
Arg-407

411-LeuArgTyrLysHisGlyValSer-418

424-LeuAspAlaGluArgSerSerTyrSerAla-433

442-LeuThrArgAlaGluAsnLeu-448

455-LeuGlyGlyGlyLeuLysArgAspThrGlnThrAspLys-467

Hydrophilic Regions - Hopp-Woods

28-GluGlnProLysValGluVal-34

36-GluThrPheLysAsnAspThrAlaAspSerGlyIleArgAlaVal-50

61-ProArgLeuGlnLys-65

70-AlaLeuGluArgAsnThrSerLeu-77

91-TyrMetIleGluArgAsnAsn-97

105-AsnAlaAsnAspSerArgGlnGlySer-113

138-GlyArgValArgSerSerSerGluAlaAla-147

156-AlaAsnArgAspAlaAla-161

177-ArgTyrAlaGluGluAlaMet-183

188-ArgValLeuLysThrArgGluGluThrTyrLysLeuSerGluLeuArgTyr-204

215-ArgGlnGlnGluAlaLeuIleGluSerAlaLysAlaAspTyr-228

232-AlaArgSerArgGluGlnAlaArgAsn-240

250-IleProAspAspLeuPro-255

277-ValLeuLeuAspArgProAspIleArgAlaAlaGluHisAlaLeuLysGlnAlaAsn-295

315-ValAspThrHisSerAlaGlu-321

350-LysAlaAsnLeuAspValAlaLysLeuArgGln-360

383-ThrAlaArgGluGlnLeuAspLysAlaTyrAspAlaLeuSerLysGlnSerArgAlaSerLysGluAlaLeu
Arg-407

424-LeuAspAlaGluArgSerSerTyrSerAla-433

442-LeuThrArgAlaGluAsnLeu-448

458-GlyLeuLysArgAspThrGlnThrAspLys-467

a730**AMPHI Regions** - AMPHI

6-ArgLeuIleLysLeuLeuAlaAlaCys-14

26-LeuAlaAlaAspLeu-30

67-GlnIleAsnValIleGlnAspTyrThrHisArg-77

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111-AsnHisAlaAlaAsp-115
141-HisProAlaAspAlaTyrAspGlyProLysGlyGlyAsnTyrProLysProThr-158
187-GlnArgIleSerAspAsnTyrSerAsnLeuGlySerAsnPheSerAspArgAlaAspGlu-206
214-HisAsnAlaLysLeu-218
220-ArgTrpGlyAsnSerMetGluPheIleAsnGlyValAla-232
234-GlyAlaLeuAsnProPheIleSer-241
262-AlaAlaMetArgAsnIleAla-268
277-AlaValIleGlyGlyLeuGlySerValAlaGlyPheGluLysAsnThrArgGluAlaValAspArgTrpIle
GlnGlu-302
305-AsnAlaAlaGluThrValGluAlaLeuValAsnValLeuProPheAlaLysValLysAsnLeuThrLysAla
AlaLysPro-331
347-ArgThrThrArgLysValThr-353
355-GluThrGluGlyLeuAsnArgIleArgGln-364
384-IleAsnValLeuSerGlyAsnSerIleGlnHis-394
426-ThrHisGluIleSerAspIleValThr-434
475-GluProAlaThrGlyLysValValThrAlaPheProAsp-487

Antigenic Index - Jameson-Wolf

2-LysProLeuArgArgLeuIle-8
35-PheIleThrAspAsnAlaGlnArgGlnHisTyrGluProGlyGlyLys-50
55-GlyAspProArgGlySerValSerAspArgThrGlyGlnIle-68
74-TyrThrHisArgMetGly-79
97-ArgPheSerGlyHisGlyTyrGluGluHisAlaProPheAsp-110
112-HisAlaAlaAspSerAlaSerGluGluLysGlyAsnValAspGluGlyPhe-128
133-LeuAsnTrpGluGlyHisGluHisHisProAlaAspAlaTyrAspGlyProLysGlyGlyAsnTyrProLys
ProThrGlyAlaArgAspGluTyrThrTyrHisVal-168
170-GlyThrAlaArgSerIleLysLeuAsnProThrAspThrArgSerIleArgGlnArgIleSerAspAsnTyr
SerAsn-195
197-GlySerAsnPheSerAspArgAlaAspGluAlaAsnArgLysMetPheGluHisAsnAlaLysLeuAspArg
TrpGlyAsnSer-224
257-TyrAlaIleAspLysAlaAlaMet-264
271-ProAlaGluGlyLys-275
287-GlyPheGluLysAsnThrArgGluAlaValAsp-297
299-TrpIleGlnGluAsnProAsnAlaAlaGluThrValGlu-311
323-LysAsnLeuThrLysAlaAlaLysProGlyLysAlaAlaValSerGlyAspPhe-340
344-TyrAsnThrArgThrThrArgLysValThrThrGluThrGluGlyLeuAsnArgIleArgGlnAsnGlnLys
AsnSerAsnIleHisGluLysAsnTyrGlyArgAspAsnProAsnHisIle-384
397-TyrGlyAspGluAlaGlyGlyGly-404
407-PheProGlyLysProGlyLysThrThrPhePro-417
419-HisTrpSerAlaSerLysIleThrHisGluIleSerAsp-431
433-ValThrSerProLysThrGln-439
450-TyrIleAlaLysGlyArgProAlaArg-458
461-SerTyrGluThrArgAspGlyIleArgIle-470
472-ThrValTyrGluProAlaThrGlyLys-480
485-PheProAspArgThrSerAsnProLysTyrAsnProValLys-498

Hydrophilic Regions - Hopp-Woods

2-LysProLeuArgArgLeuIle-8
39-AsnAlaGlnArgGlnHisTyrGluProGlyGly-49
55-GlyAspProArgGlySerValSerAspArgThrGly-66
102-GlyTyrGluGluHisAlaPro-108
112-HisAlaAlaAspSerAlaSerGluGluLysGlyAsnValAspGluGly-127
135-TrpGluGlyHisGluHisHisPro-142
144-AspAlaTyrAspGlyProLysGlyGlyAsnTyrProLys-156
158-ThrGlyAlaArgAspGluTyr-164

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170-GlyThrAlaArgSerIleLys-176
 178-AsnProThrAspThrArgSerIleArgGlnArgIleSerAsp-191
 200-PheSerAspArgAlaAspGluAlaAsnArgLysMetPheGluHisAsnAlaLysLeuAspArgTrpGlyAsn-223
 257-TyrAlaIleAspLysAlaAlaMet-264
 271-ProAlaGluGlyLys-275
 287-GlyPheGluLysAsnThrArgGluAlaValAsp-297
 303-AsnProAsnAlaAlaGluThrValGlu-311
 323-LysAsnLeuThrLysAlaAlaLysProGlyLysAlaAlaVal-336
 347-ArgThrThrArgLysValThrThrGluThrGluGlyLeuAsnArgIleArgGlnAsnGlnLysAsnSerAsnIleHisGluLysAsnTyrGlyArgAspAsnProAsn-382
 399-AspGluAlaGlyGly-403
 424-LysIleThrHisGluIleSerAsp-431
 450-TyrIleAlaLysGlyArgProAlaArg-458
 463-GluThrArgAspGlyIleArgIle-470
 485-PheProAspArgThrSerAsnProLys-493

a731**AMPHI Regions - AMPHI**

17-AlaCysAlaValPro-21

Antigenic Index - Jameson-Wolf

22-GluAlaTyrAspAspGlyGlyArgGlyHis-31
 34-ProValGlnAsnGlnAlaGlyThrAlaAsp-43
 45-ArgAlaPheSerCysGluAsnGly-52
 56-HisValArgArgLeuAspGlyGlyArgIleAlaLeuArgLeuAspGlyArgArgAlaValLeuSerSerAspValAlaAlaSerGlyGluArgTyrThrAla-89
 92-GlyLeuPheGlyAsnGlyThrGluTrpHisGlnLysGlyGlyGluAla-107
 113-AspAlaTyrGlyAsnSerValGluThrSerCysArgAlaArg-126

Hydrophilic Regions - Hopp-Woods

22-GluAlaTyrAspAspGlyGlyArgGlyHis-31
 56-HisValArgArgLeuAspGlyGlyArgIleAlaLeuArgLeuAspGlyArgArgAlaValLeu-76
 80-ValAlaAlaSerGlyGluArgTyrThrAla-89
 100-TrpHisGlnLysGlyGlyGlu-106
 119-ValGluThrSerCysArgAlaArg-126

a732**AMPHI Regions - AMPHI**

14-LeuGlyAlaIleSer-18
 43-ValGlnSerIleArgThrMetAlaGluValTyrGly-54
 66-AspAlaAspLeuPheGluGlyAlaMetLysGlyMetVal-78
 95-GluIleLysGluSerThrSerGly-102
 115-AspGlyPheValLysValValSerProIleGluAsp-126
 155-GluAlaValLysLysMet-160
 183-ValAsnLeuThrArg-187
 214-GluArgThrValGluSerValAsnThrAlaAlaLys-225
 283-LysAlaValProGluAspTyrValTyr-291
 297-SerLeuAlaGlyIleProAlaGluLeu-305
 322-SerGluIleValAlaGly-327
 400-LeuValGlyHisIleGlyAsn-406
 446-ArgArgIleProAsnProAlaLysAsp-454
 459-LysAlaLeuAspLeuValLysSerProGluGlnTrpGlnLysSerLeu-474

Antigenic Index - Jameson-Wolf

30-AlaAlaGluLysAspArgArgAspAsnGluVal-40
 59-AsnTyrTyrGlnAspLysProAspAlaAspLeuPhe-70